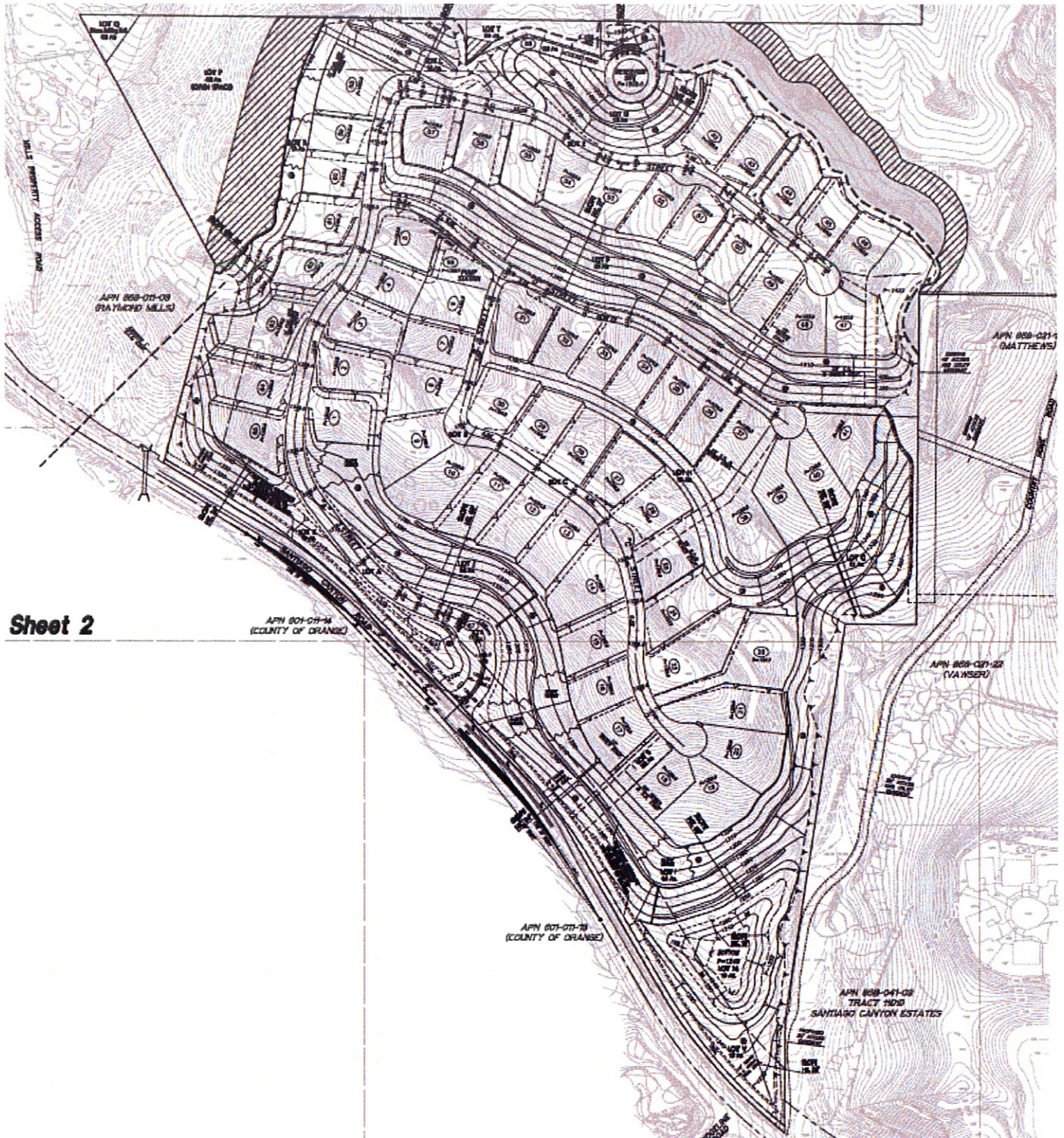


Appendix K

Traffic Impact Study



SADDLE CREST TRAFFIC IMPACT STUDY (01/18/12) County of Orange, California



Sheet 2

January 18, 2012

Mr. Mike Eadie
RUTTER SANTIAGO, LP.
18012 Cowan, Suite 200
Irvine, CA 92614

Subject: Saddle Crest Traffic Impact Study, County of Orange (Updated 1/18/12)

Dear Mr. Eadie:

RK ENGINEERING GROUP, INC. (RK) is pleased to submit this traffic impact study for the proposed Saddle Crest residential development located in the County of Orange. This report provides a summary of the findings, analysis procedures, and evaluation of the proposed project with respect to on-site and off-site traffic impacts pursuant to the County of Orange requirements.

This Traffic Impact Study has also addressed the impacts of the project with respect to Santiago Canyon Road pursuant to the Orange County Growth Management (GM) Transportation Implementation Manual (TIM). Based upon a review of the current procedures, it has been found that the analysis of the Santiago Canyon Road roadway segments based upon the Highway Capacity Manual (HCM) "Percent Time Following" methodology is not appropriate for Santiago Canyon Road in this area. An alternative procedure has been developed based upon typical Orange County public agency requirements with respect to volume capacity ratio of a roadway segment. This methodology has been included in the Traffic Impact Study and it is recommended that the TIM be modified to incorporate this methodology. The volume capacity ratio methodology more appropriately reflects actual operating conditions along Santiago Canyon Road.

Based upon this review, the project can be accommodated within the planned circulation system, given that the recommended improvements stated in this study are implemented. The study recommendations are included in the "Findings and Recommendations" section of this report.

Mr. Mike Eadie
RUTTER SANTIAGO, LP.
January 18, 2012
Page 2

RK is pleased to assist RUTTER SANTIAGO, LP on Saddle Crest and looks forward to working with you again in the future. If you have any questions regarding this study, or would like further review, please do not hesitate to call us at (949) 474-0809.

Sincerely,
RK ENGINEERING GROUP, INC.

Robert Kahn

Robert Kahn, P.E.
Principal



Bryan Estrada

Bryan Estrada
Transportation Planner

Attachments

**SADDLE CREST
TRAFFIC IMPACT STUDY
County of Orange, California**

Prepared for:

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January 18, 2012

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1.0 Introduction

A. Purpose of Report and Study Objectives

The purpose of this traffic impact study is to evaluate the proposed Saddle Crest residential development from a traffic circulation standpoint. The proposed development is located on the northeast side of Santiago Canyon Road north of Ridgeline Road and south of Modjeska Grade Road within the County of Orange.

Study objectives include: (1) documentation of Existing traffic conditions in the vicinity of the site; (2) documentation of Existing Plus Project traffic conditions; (3) evaluation of Interim (Year 2015) Without Project traffic conditions; (4) evaluation of Interim (Year 2015) With Project traffic conditions; (5) evaluation Buildout (Year 2035) Without project; (6) evaluation of Buildout (Year 2035) With Project traffic conditions; and (7) determination of on-site and off-site improvements and system management actions needed to achieve County of Orange level of service requirements.

The traffic study includes an evaluation of study area intersections and roadway segments of Santiago Canyon Road based upon the County's Growth Management TIM (Transportation Implementation Manual) modifications to the TIM analysis procedures for Santiago Canyon Road are proposed as part of this study.

B. Site Location and Study Area

Saddle Crest is located in unincorporated Orange County north of the junction of Live Oak Canyon Road with El Toro Road and east of Santiago Canyon Road. The cities of Lake Forest, Mission Viejo and Rancho Santa Margarita are located to the south; the Foothill Ranch and Portola Hills Planned Communities and the Whiting Ranch Wilderness Park and Limestone Canyon Regional Park are located to the west; the Cleveland National Forest is located to the east; and, the Silverado and Modjeska canyon areas and the Cleveland National Forest are located to the north.

The project is located on the north side of Santiago Canyon Road, south of Modjeska Grade Road and north of Ridgecrest Road, in the County of Orange. Exhibit A illustrates the site location and traffic analysis study area. The project proposes one (1) full access point onto Santiago Canyon Road, as shown in Exhibit B. The study area includes the following intersections:

North-South Street	East-West Street
Portola Parkway	Glenn Ranch Road SR-241 Toll Road Ramps
Santiago Canyon Road	Modjeska Grade Road Project Access Live Oak Canyon Road
Santiago Canyon Road/ El Toro Road	Glenn Ranch Road
Marguerite Parkway	El Toro Road
Portola Parkway/Santa Margarita Parkway	El Toro Road

None of the study area intersections are part of the 2009 Orange County Congestion Management Program (CMP). The only CMP highway in the vicinity of the project is El Toro Road located south of the SR-241 Toll Road. This project will not contribute a significant amount of traffic to this roadway based upon CMP criteria. The project generates less than the CMP threshold of 1,600 daily trips in close proximity to a CMP Highway System link.

C. Development Project Description

The 113.6 acre Saddle Crest project includes the development of 65 single family residential homes on lots which will have an average size of approximately 20,000 square feet. Vehicular access to the Saddle Crest community will be from Santiago Canyon Road. The project will be served by a single entry/exit feature.

D. History and Context

On January 28, 2003, the Orange County Board of Supervisors approved the project as it was proposed at that time. In addition to the 113.6-acre Saddle Crest project site, that project also included the 388.3-acre Saddle Crest North project site (which includes the Watson parcel) and the 83.6-acre Saddle Creek South project site.

Since that time, 304.7 acres of the Saddle Creek North project site were transferred (in December 2008) to The Conservation Fund (a non-profit entity whose purpose is land and water conservation). Additionally, the 83.6-acre Saddle Creek South project site was transferred (in April 2011) to the Orange County Transportation Authority for conservation purposes (under its freeway improvements mitigation program).

At this time, only the Saddle Crest project is being proposed (no project is currently being proposed for the Watson parcel).

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2.0 Methodology

Based upon County of Orange policy within the TIM, the methodology used to assess the operation of the signalized study area intersections is Intersection Capacity Utilization (ICU). To calculate the ICU, the volume of traffic using the intersection is compared with the capacity of the intersection. ICU is usually expressed as a ratio. This ratio represents that portion of the hour required to provide sufficient capacity to accommodate all intersection traffic if all approaches operate at capacity.

Pursuant to County of Orange Policy, all signalized intersections have been evaluated based upon the ICU Methodology. Caltrans had requested that the intersection of the County highways with state facilities be based upon the HCM (Highway Capacity Manual) Methodology. However, this was not done in this study, because it is in conflict with the policy of the County of Orange and the OCTA.

A. ICU Methodology

1. Intersection Capacity Utilization (ICU) methodology was used to analyze signalized study area intersections;

2. Saturation Flow Rate:

Saturation flow value of 1,700 vehicles per lane per hour for all lanes; no adjustments are used for protected movements with dedicated lanes (including both right and left turns). A volume adjustment of 0.85 was used for right turn movements where there existed a right turn or “defacto” right turn lane adjacent to the curb lane.¹

3. Clearance Interval and Cycle Time:

A clearance interval factor of 5% (0.05) is applied to the ICU calculations.¹ The cycle time is 100 seconds for ICU analysis purposes.

4. Level of Service Ranges¹:

<Table shown on following page>

¹ Source: Orange County GMP (Growth management Program) TIM (Transportation Implementation Manual)

LOS	CRITICAL VOLUME TO CAPACITY RATIO
A	0.00 - 0.60
B	0.61 - 0.70
C	0.71 - 0.80
D	0.81 - 0.90
E	0.91 - 1.00
F	>1.00

5. Peak-Periods:

Weekday peak-hour analysis periods are defined as follows:

7:00 to 9:00 AM

4:00 to 6:00 PM

6. Peak-Hour:

The highest one-hour period in both the AM and PM peak periods, as determined by four consecutive 15-minute count periods are used in the ICU calculations. Both AM and PM peak hours are studied.

7. Peak-Hour Data Consistency:

Variations in peak-hour volumes can affect LOS calculations because they vary from day-to-day. To minimize these variations, no counts are taken on Mondays, Fridays, holidays or weekends. The traffic count worksheets for this study are included in Appendix A.

8. Right Turn Movements:

If the distance from the edge of the outside through lane is at least 19 feet and parking is prohibited during the peak period, right turning vehicles may be assumed to utilize this as a right turn lane.¹ Otherwise, all right turn traffic is assigned to the through lane. If a right turn lane exists, right turn

¹ Source: Orange County GMP (Growth management Program) TIM (Transportation Implementation Manual)

activity is checked for conflicts with other critical movements. It is assumed that right turn movements are accommodated during non-conflicting left turn phases (e.g., northbound right turns during westbound left turn phase), as well as non-conflicting through flows (e.g., northbound right turn movements and north/south through flows). Right turn movements become critical when conflicting movements (e.g., northbound right turns, southbound left turns, and eastbound through flows) represent a sum of V/C ratios that are greater than the normal through/left turn critical movements.

B. HCM Methodology (Unsignalized Intersections)

Based upon County of Orange requirements, study area intersections that are stop sign controlled with stop control on the minor street only have been analyzed using the unsignalized intersection methodology of the Highway Capacity Manual (HCM 2000). For these intersections, the calculation of level of service is dependent on the occurrence of gaps occurring in the traffic flow of the main street. Using data collected describing the intersection configuration and traffic volumes at these locations, the level of service has been calculated. The level of service is determined based on the worst individual movement or movements sharing a single lane. The relationship between the level of service and delay is different than for signalized intersections.

The level of service is defined for the unsignalized intersection methodology² is as follows:

LOS	Average Control Delay Per Vehicle (Seconds)
	Unsignalized
A	0.00 - 10.00
B	10.01 - 15.00
C	15.01 - 25.00
D	25.01 - 35.00
E	35.01 - 50.00
F	>50.01

² Source: HCM (Highway Capacity Manual, 2000)

C. Santiago Canyon Road Capacity Methodology

This section addresses the traffic analysis procedures for Santiago Canyon Road (SCR) as contained in the County of Orange Transportation Implementation Manual (TIM). The purpose of this is to provide the technical basis for updating the TIM as it pertains to Santiago Canyon Road. This methodology is currently required to be used for traffic impact studies pursuant to the County Growth Management program.

The TIM is intended to clarify the methodology used to determine the “Traffic Level of Service” for Santiago Canyon Road as related to the Growth Management (GM) Element of the County General Plan. Section “I” of the TIM addresses *TRAFFIC LEVEL OF SERVICE POLICIES*, where it specifies level of service (LOS) “D” throughout the County with the exception of Santiago Canyon Road, for which it states:

“LOS “C” shall be maintained on all uninterrupted links of three miles in length or more on Santiago Canyon Road until such time as uninterrupted segments (i.e. between major signalized intersections) are reduced to less than three miles.”

The traffic performance measure used for highway planning and design applications in Orange County and virtually all other agencies within the County is the volume-to-capacity (V/C) ratio or ICU (Intersection Capacity Utilization) methodology. This methodology compares the volume to the capacity of a roadway segment or intersection and determines how much of this capacity is being used for both existing and future conditions.

This methodology has also been adopted by the OCTA (Orange County Transportation Authority) within their CMP (Congestion Management Program) procedures. The volume-to-capacity (V/C) ratio or ICU methodology is also used for

the CMP program. The volume-to-capacity ratio methodology is easy to understand since it simply compares the ratio of existing or future traffic to a roadway's capacity.

This methodology is utilized by the County of Orange for its signalized intersection analysis procedure, utilizing the ICU (Intersection Capacity Utilization) methodology and also its roadway segment analysis based upon ADT (average daily traffic). While it is possible that future demand could result in a V/C ratio greater than 1.0, it does provide useful information about future demand with respect to a roadway's capacity and number of lanes required. The volume to capacity ratio information is typically used for deriving LOS and is utilized by all thirty-four (34) cities within the County of Orange.

Roadway Capacity Derivation for Santiago Canyon Road

The HCM two-lane roadway analysis is based strictly on the ability to pass rather than the actual capacity of the roadway. For the most part, passing on Santiago Canyon Road is not possible; therefore, the roadway's physical capacity is more indicative of its operating conditions. The two-lane highway methodology in the HCM essentially addresses rural highways where the driving experience is heavily influenced by the ability to pass slower moving vehicles. Accordingly, a maximum volume for a given LOS is determined rather than the actual capacity. This volume is then related to the "Percent Time Spent Following" to establish the LOS. This distinction between maximum volume and capacity is of key importance in evaluating LOS for Santiago Canyon Road. The ability to pass on the two (2) lane segments of Santiago Canyon Road is not valid, since passing is not feasible at most locations. Furthermore, the HCM Methodology does not consider the design characteristics of two-lane highways that include right/left intersection turn lanes, two-way left-turn lanes, wide cross-sections, and a limited amount of slow moving vehicles (i.e. trucks and RVs), which exist on Santiago Canyon Road.

RK has made an evaluation of existing conditions, along Santiago Canyon Road, based upon the “Percent Time Spent Following” methodology and has compared it to actual operating conditions along Santiago Canyon Road. This analysis indicates that the segments along Santiago Canyon Road are currently operating at LOS D which is not reflective of current conditions. This evaluation is included in Section 6.0 page 6-3. The HCM methodology does not reflect actual operating conditions of Santiago Canyon Road.

The County of Orange utilizes a roadway lane capacity of 1,700 vehicles per hour for each direction of travel per lane. This is similar to what is stated in the Highway Capacity Manual (HCM), which indicates a one-way capacity value of 1,700 vehicles per hour for uninterrupted sections of two lane highways³. The Volume-to-Capacity methodology has been utilized in Orange County by several agencies for many years, and more closely represents operating conditions along Santiago Canyon Road. The derivation of the highway’s segment Volume-to-Capacity Ratio relationship to Level of Service (LOS) comes directly from the County’s Growth Management Transportation Implementation Manual. According to Page 32, Table IV-2B of the manual, a matrix has been established to relate an Arterial Highway’s Level of Service to various roadway segment service volumes. The maximum volume-to-Capacity Ratio for a Two-Lane Highway at LOS C is 0.80, based upon Table IV-2B. This represents the same Volume-to-Capacity Ratio that the County uses for other Highway capacity analysis (i.e. intersections and ADT volumes on roadway segments). The maximum directional lane capacity for a two-lane roadway is 1,700 vehicles per hour, and a lane volume of 1,360 vehicles per hour, which is 0.80 times the maximum lane capacity of 1,700 vehicles per hour, which represents LOS C. These lane capacity guidelines shall be used to ensure that the level of service “C” capacity of 1,360 vehicles per lane will not be exceeded.

The County of Orange and various cities have also adopted volume to capacity ratios related to level of service (LOS) that are consistent throughout the County of

³ Source: HCM (Highway Capacity Manual, 2000)

Orange. Based upon the historical lane capacity, the following table has been developed to determine various peak hour directional and average daily trip capacities for Santiago Canyon Road and other similar highways.

LOS ⁴	Max V/C Ratio ⁴	Maximum Peak Hour Directional Volume ⁵ (vph)	ADT	
			2-lane Undivided ⁶	2-lane w/Left-Turn Lanes ⁶
A	0.60	1,020	7,500	11,250
B	0.70	1,190	8,800	13,200
C	0.80	1,360	10,000	15,000
D	0.90	1,530	11,300	16,950
E	1.00	1,700	12,500	18,750
F	1.00 +	*	*	*

These factors are very similar to other cities in Orange County that have roadways similar to Santiago Canyon Road. These include Laguna Canyon Road, Ortega Highway, Harvard Avenue and other two lane highways. For example, peak directional lane capacity for roadway segments for various cities is as follows:

- City of Irvine = 1,600 vph/lane for LOS "E" for Controlled Intersection Spacing 1 mile or less and 2,000 vph/lane for LOS "E" when controlled intersections are greater than 1 mile spacing
- Caltrans/Ortega Highway Study = 1,785 vph/lane for LOS "E"
- County of Orange/Laguna Canyon Road (SR-133) SR-73 to El Toro Road = 1,700 vph/lane for LOS "E".

These are all very similar in capacity to the County's 1,700 vph per lane for a two-lane highway capacity as shown above. County policy for Santiago Canyon Road requires a higher level of service than other roadways throughout the County. No change in this policy is suggested, therefore LOS "C" is retained as the level of service standard for Santiago Canyon Road intersections and roadway segments. As part of this project, it is proposed to analyze Santiago Canyon Road similar to other

⁴ Source: Orange County GMP (Growth management Program) TIM (Transportation Implementation Manual)

⁵ Calculated based upon a lane capacity of 1,700 vph and the max. V/C ratios

⁶ Orange County Highway Design Manual. Two-lane with left-turn lane capacity estimated based upon an increase in capacity 50%, similar to a four lane highway with a median.

jurisdictions throughout Orange County. The maximum peak directional volume to maintain LOS "C" along Santiago Canyon Road when traffic signal spacing is more than three miles apart for two lane roadways (one in each direction) and four lane roadways (two in each direction) is as follows:

- Two lane roadway = 1,360 vph
- Four lane roadway = 2,720 vph

D. Acceptable Level of Service and Significant Impact Criteria

The acceptable Level of Service (LOS) for intersections within the County of Orange is D or better for intersections. Therefore, any intersections operating at a LOS "E" or "F" will be considered deficient. For this study, the ICU (Intersection Capacity Utilization) method has been used for signalized intersections and the HCM method has been used for unsignalized intersections along Santiago Canyon Road. The acceptable level of service for the uninterrupted segments of Santiago Canyon Road identified in Orange County TIM is LOS "C". This will be determined by the volume capacity level of service methodology which has been discussed in Section 2.0 of this report.

A project's significant impact to intersections is determined if the project causes an intersection's level of service to degrade from LOS "D" or better to "E" or "F" or if the project causes a change in volume/capacity ratio (ICU) greater than 0.01, if the intersection is operating at LOS "E" or "F".

For Santiago Canyon Road, a significant impact is considered if the project causes the LOS to degrade from "C" or better to "D", "E" or "F". A significant impact is also considered if the project causes the volume capacity ratio to increase by more than 0.01, if the roadway segment is operating at LOS "D", "E" or "F".

3.0 Area Conditions

A. Study Area

The study area includes the following intersections as included in the approved scope of work (Appendix B):

North-South Street	East-West Street
Portola Parkway	Glenn Ranch Road SR-241 Toll Road Ramps
Santiago Canyon Road	Modjeska Grade Road Project Access Live Oak Canyon Road
El Toro Road	Glenn Ranch Road
Marguerite Parkway	El Toro Road
Portola Parkway/Santa Margarita Parkway	El Toro Road

B. Existing Traffic Controls and Intersection Geometrics

Exhibit C identifies the existing roadway conditions for the study area roadways. The number of through traffic lanes for existing roadways and the existing intersection controls are identified.

C. Existing Traffic Volumes

Existing AM and PM peak hour traffic volumes for the study area intersections are shown on Exhibit D-1. These volumes are based upon manual AM and PM peak hour turning movement counts compiled for RK in May 2011. The traffic count worksheets are included in Appendix A.

Existing average daily traffic (ADT) volumes on arterial highways in the study area are also shown on Exhibit D-1. ADT volumes were counted by machines compiled for RK in May 2011. The ADT worksheets are included in Appendix A.

Existing AM and PM peak hour roadway segment volumes along Santiago Canyon Road are shown in Exhibit D-2. These volumes were calculated based on the conservation of flow from existing peak hour turning movement volumes at the adjacent intersections. These represent the peak hour segment volume directly adjacent to the intersections where the peak hour intersection analysis (ICU) was performed. Also, this was the only location where peak hour segment volumes were available for the Interim (Year 2015) and Buildout Year 2035 traffic projections. For consistency purposes, the same intersections were selected for Existing and Existing Plus Project conditions to establish roadway segment volumes.

D. Existing Level of Service

Existing intersection level of service calculations for intersections are shown in Table 1 and are based upon manual AM and PM peak hour turning movement counts compiled for RK in May 2011. The Santiago Canyon Road segment analysis is included in Section 6.0.

For existing traffic conditions, all study area intersections are currently operating at acceptable levels of service during peak hours. Also, all Santiago Canyon Road segments are operating at LOS A based upon the proposed methodology for the amended TIM (Transportation Implementation Manual). Based upon the existing TIM methodology, some segments of Santiago Canyon Road are operating at LOS D which does not reflect actual operating conditions.

The ICU and HCM calculation worksheets for existing conditions are provided in Appendix C.

E. OCTA Master Plan of Arterial Highways

Exhibit E shows the Orange County Transportation Authorities (OCTA) Master Plan for Arterial Highways and Roadway Cross Sections. Based on the Master Plan, Santiago Canyon Road is planned as a four lane divided primary highway. For the most part, today, it is a two lane highway with left and right turn lanes at some intersections.

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4.0 Projected Traffic

A. Project Traffic Conditions

1. Trip Generation

Trip generation represents the amount of traffic that is attracted and produced by a development. The traffic generation for the project is based upon the specific land uses that have been planned for the development. The proposed Saddle Crest development will consist of 65 single-family detached dwelling units, which will have an average size of approximately 20,000 square feet. A site plan is shown in Exhibit B.

Trip generation rates for the proposed development are shown in Table 2. These trip rates are based upon Orange County standards and were previously used in the Foothill/Trabuco Specific Plan Traffic Study. They are derived from local Orange County data and the *Institute of Transportation Engineers (ITE) Trip Generation* documents. This publication provides a comprehensive evaluation of trip generation rates for a variety of land uses.

Both daily and peak-hour trip generation for the proposed development are shown in Table 3. The proposed development is projected to generate approximately 780 gross trip-ends per day, with 58 gross vehicles per hour during the AM peak hour and 78 gross vehicles per hour during the PM peak hour. All trips generated by the proposed development will enter/exit the project site via one (1) full access point off Santiago Canyon Road.

The proposed Saddle Crest development will be developed in a vacant location which does not currently generate traffic. No trip credit has been taken for the existing land use.

2. Trip Distribution and Assignment

Trip distribution represents the directional orientation of traffic to and from the project site. Trip distribution is heavily influenced by the geographical location of the site, the location of retail, business, and recreational opportunities, and the proximity to the regional freeway system. The directional orientation of traffic was determined by evaluating existing and proposed land uses, and highways within the community.

Trip distribution patterns for this study have been based upon near-term conditions and those highway facilities that are either in place or will be contemplated over the next few years. The outbound and inbound trip distribution pattern for the project is graphically depicted on Exhibit F. These trip distribution patterns have been pre-approved by the County of Orange's staff prior to the completion of this study.

The assignment of traffic from the site to the adjoining roadway system has been based upon the site's trip generation, trip distribution, and proposed arterial highway and local street systems that would be in place by the time of initial occupancy of the site.

3. Modal Split

Modal split denotes the proportion of traffic generated by a project that would use any of the transportation modes, namely buses, cars, bicycles, motorcycles, trains, carpools, etc. The traffic reducing potential of public transit and other modes is significant. However, the traffic projections in this study are "conservative" in that public transit and alternative transportation may be able to reduce the traffic volumes. Thus no modal split reduction is applied to the projections. With the implementation of transit service and provision of alternative transportation services and incentives, the automobile traffic demand can be reduced significantly.

The OCTA existing and proposed bikeway facilities are available in Exhibit E-2. OCTA categorizes commuter bikeways into three Classifications;

- Class I – off-street paved bike paths
- Class II – on-street striped and signed bicycle lanes
- Class III – on-street shared lane bicycle routes

There are currently northbound and southbound Class II bikeways along Santiago Canyon Road adjacent to the project site. Future plans to improve the bikeways along Santiago Canyon Road to Class I are proposed under the OCTA Commuter Bikeways Strategic Plan. The plan encourages bicycle commuting as not only a way to reduce vehicle congestion and exhaust emissions, but also to improve the quality of life for residents and help build a more sustainable environment.

As aforementioned, the traffic projections in this study are "conservative" and no modal split reduction is applied to the projections in order to establish a worst-case analysis. With the implementation of transit service and provision of alternative transportation ideas and incentives, the automobile traffic demand can be reduced.

4. Project Peak Hour Traffic Volumes

Project AM and PM peak hour intersection turning movement volumes and average daily traffic are shown on Exhibit G.

5. Existing Plus Project Peak Hour Traffic Volumes

Existing Plus Project AM and PM peak hour intersection turning movement volumes and average daily traffic were determined by combining the existing traffic volumes obtained in May 2011 with the project traffic volumes. The Existing Plus Project AM and PM peak hour intersection turning movement volumes and average daily traffic are shown on Exhibit H-1, and peak hour roadway segment volumes along Santiago Canyon Road are shown in Exhibit H-2.

B. Background Traffic

1. Method of Projection

RK has utilized future traffic volumes obtained from Austin Foust and Associates (AFA), to project future traffic conditions in both the Interim (Year 2015) and for Buildout (Year 2035) conditions. AFA has developed local area models which are consistent with the current OCTAM 3.3 model developed for use by the OCTA (Orange County Transportation Authority). The AFA traffic model has combined existing traffic volumes with an area wide growth rate and cumulative projects planned in the vicinity. The Interim (Year 2015) and Buildout (Year 2035) model account for future planned roadway improvements to the area wide circulation system that will impact traffic flow. These models also account for future interim and buildout of land uses in the study area. Everything that RK has analyzed is consistent with the AFA Modeling data.

2. Traffic Forecast Methodology

As stated in the AFA Saddle Crest Traffic Impact Study Traffic Forecast, the traffic forecast volumes for interim year and buildout without the project are based on various sources including previous analysis carried out for Santiago Canyon Road (County of Orange Transportation Implementation Manual, Draft Santiago Canyon Road Analysis, Austin-Foust Associates, Inc., April 2009), the current OCTAM 3.3, and the LFTAM, which includes the Vacant Land Opportunities Study Area development as well as the recently approved Lake Forest Sports Park at Glass Creek. The East Orange approved development and buildout of the Foothill/Trabuco Specific Plan (including the project site) are also assumed in the forecasts. The AFA traffic forecast data for Interim (Year 2015) and Buildout (Year 2035) without the project is included in Appendix D.

This modeling data is conservative, since several of the properties included in the Foothill/Trabuco Specific Plan - FTSP (i.e. Saddle Creek South, O'Neill Oaks, Ferber Ranch and the Hafen Estate) have been sold for open space to the OCTA (Orange County Transportation Authority). A summary of those properties that have been eliminated is as follows:

<u>FTSP Name:</u>	<u>DUs</u>
• Bridlewood	439
• Bach	37
• Porter	12
• Edgar (4-S Ranch, North)	78
• Live Oak Limited	21
• Edgar (4-S Ranch, South)	22
• Ferber	72
• Lucarelli	36
Total	717

This has reduced the number of potential dwelling units in the Foothill/Trabuco Specific Plan area by 717 dwelling units or 26% of the approved dwelling units. The OCTAM uses regional countywide demographic data projections (i.e., OCP-2006) to produce traffic forecasts on the local regional highway system. The LFTAM was developed according to the Orange County sub-area traffic modeling guidelines that have been adopted by the Orange County Transportation Authority (OCTA), and the OCTA has certified the traffic model as being consistent with the OCTAM regional model. The interim year and buildout model were calibrated by using the Year 2011 traffic counts used for this study.

Forecast data from the AFA modeling that was presented for the south end section of Santiago Canyon Road in the AFA Saddle Crest Traffic Impact Study Traffic Forecast Data Analysis is expanded here to include volume data for 2011 existing counts, short-term (year 2015) and buildout according to OCP-2006 projections in the OCTAM 3.3 model. This data and the OCTAM were mainly used to arrive at the volumes on

Santiago Canyon Road north of Live Oak Canyon Road, and the LFTAM was used for the remaining areas.

To determine Interim (Year 2015) and Buildout (Year 2035) traffic forecasts with the project, the project volumes calculated in section 4.0 were added to the forecast volumes. It should be noted that this was used to be sure that the projects' traffic was adequately accounted for in the traffic analysis. Again, this is a conservative approach, since all of the projects' trips would already be included in the Foothill/Trabuco Specific Plan land uses for the project site.

C. Interim (Year 2015) Without Project Traffic Volumes

In order to assess Interim (Year 2015) Without Project traffic conditions, the AFA 2015 traffic model volumes were used for each study area intersection. Interim (Year 2015) Without Project AM and PM peak hour intersection turning movement volumes and average daily traffic are shown on Exhibit I-1, and peak hour roadway segment volumes along Santiago Canyon Road are shown on Exhibit I-2.

D. Interim (Year 2015) With Project Traffic Volumes

Interim (Year 2015) With Project traffic conditions were assessed by adding the project traffic volumes to the AFA 2015 traffic model volumes for each study area intersection. Interim (Year 2015) With Project AM and PM peak hour intersection turning movement volumes and average daily traffic are shown on Exhibit J-1, and peak hour roadway segment volumes along Santiago Canyon Road are shown on Exhibit J-2.

E. Buildout (Year 2035) Without Project Traffic Volumes

In order to assess Buildout (Year 2035) Without Project traffic conditions, the AFA buildout traffic model volumes were used for each study area intersection. Buildout (Year 2035) Without Project AM and PM peak hour intersection turning movement volumes and average daily traffic are shown on Exhibit K-1, and peak hour roadway segment volumes along Santiago Canyon Road are shown on Exhibit K-2.

F. Buildout (Year 2035) With Project Traffic Volumes

Buildout (Year 2035) With Project traffic conditions were assessed by adding the project traffic volumes to the AFA buildout traffic model volumes for each study area intersection. Buildout (Year 2035) With Project AM and PM peak hour intersection turning movement volumes and average daily traffic are shown on Exhibit L-1, and peak hour roadway segment volumes along Santiago Canyon Road are shown on Exhibit L-2.

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5.0 Traffic Analysis

A. Capacity and Level of Service Improvement Analysis

1. Level of Service for Existing Conditions

Intersection levels of service for the existing network, as counted in May 2011, are shown in Table 1. As shown in Table 1, ICU and HCM calculations are based on the existing intersection geometrics.

For existing traffic conditions, all study area intersections are projected to operate at acceptable levels of service during peak hours. Also, Santiago Canyon Road Segments are operating better than LOS C based upon the recommended Volume/Capacity analysis procedures included in the amended TIM (Transportation Implementation Manual). Based upon the existing TIM methodology, some segments would be operating at LOS D which does not reflect actual operating conditions.

ICU and HCM calculation worksheets for existing traffic conditions are provided in Appendix C.

2. Level of Service for Existing Plus Project Conditions

Intersection levels of service for the existing network with the proposed project traffic volumes are shown in Table 4. As shown in Table 4, ICU and HCM calculations are based on the existing intersection geometrics.

For existing plus project traffic conditions, all study area intersections are projected to operate at acceptable levels of service during peak hours.

ICU and HCM calculation worksheets for existing plus project conditions are provided in Appendix E.

3. Level of Service for Interim (Year 2015) Without Project

Intersection levels of service for the existing network with background growth in the year 2015 are shown in Table 5. As shown in Table 5, ICU and HCM calculations are based on the existing intersection geometrics.

For Project Interim (Year 2015) Without Project traffic conditions, all study area intersections are projected to operate at acceptable levels of service during peak hours except for the following intersection:

North-South Street	East-West Street	LOS	
		AM	PM
Portola Pkwy. / Santa Margarita Pkwy.	El Toro Road	B	F

ICU and HCM calculation worksheets for Interim (Year 2015) Without Project conditions are provided in Appendix F.

4. Level of Service at Interim (Year 2015) With Project

Intersection Levels of Service for the existing network with background growth and the proposed project are shown in Table 6. As shown in Table 6, ICU and HCM calculations are based on the existing intersection geometrics.

For Interim (Year 2015) With Project traffic conditions, all study area intersections are projected to operate at acceptable levels of service during peak hours except for the following intersection:

North-South Street	East-West Street	LOS	
		AM	PM
Portola Pkwy. / Santa Margarita Pkwy.	El Toro Road	B	F

ICU and HCM calculation worksheets for Interim (Year 2015) With Project conditions are provided in Appendix G.

5. Level of Service at Buildout (Year 2035) Without Project

Intersection levels of service for the existing network with background growth in the Buildout (Year 2035) are shown in Table 7. As shown in Table 7, ICU and HCM calculations are based on the existing intersection geometrics.

For Buildout (Year 2035) Without Project traffic conditions, all study area intersections are projected to operate at acceptable levels of service during peak hours except for the following intersections:

<Table shown on following page>

North-South Street	East-West Street	LOS	
		AM	PM
Santiago Canyon Road	Live Oak Canyon Road	F	F
Santiago Canyon Road / El Toro Road	Glenn Ranch Road	C	F
Portola Pkwy. / Santa Margarita Pkwy.	El Toro Road	E	F

ICU and HCM calculation worksheets for Buildout (Year 2035) conditions are provided in Appendix H.

6. Level of Service at Buildout (Year 2035) With Project

Intersection Levels of Service for the existing network with background growth for Buildout (Year 2035) and the proposed project are shown in Table 8. As shown in Table 8, ICU and HCM calculations are based on the existing intersection geometrics and the intersection geometrics necessary to mitigate the impacts.

For Buildout (Year 2035) With Project traffic conditions, all study area intersections are projected to operate at acceptable levels of service during peak hours except for the following intersections:

North-South Street	East-West Street	LOS	
		AM	PM
Santiago Canyon Road	Live Oak Canyon Road	F	F
Santiago Canyon Road / El Toro Road	Glenn Ranch Road	D	F
Portola Pkwy. / Santa Margarita Pkwy.	El Toro Road	E	F

It should be noted that these are the same intersections that are expected to be deficient without the project. The project is not required to provide any mitigation for the intersection of Portola Parkway / Santa Margarita Parkway at El Toro Road, because it does not have a significant impact to this intersection (see Section 7). ICU and HCM calculation worksheets for Project Buildout (Year 2035) With Project conditions are provided in Appendix I.

7. Significant Impacts

Based on the County's criteria for significance, the project contributes to an existing projected significant impact for Buildout (Year 2035) conditions at the following intersections:

North-South Street	East-West Street
Santiago Canyon Road	Live Oak Canyon Road
Santiago Canyon Road / El Toro Road	Glenn Ranch Road

A project's significant impact to intersections is determined if the project causes an intersection's level of service to degrade from LOS "D" or better to LOS "E" or "F" or if the project causes a change in volume/capacity ratio (ICU) greater than 0.01, if the intersection is operating at LOS "E" or "F". The project does not have a significant impact at the intersection of Portola Parkway / Santa Margarita Parkway and El Toro Road because it does not meet these criteria.

A list of appropriate improvement options to restore the level of service at the intersection back to acceptable levels of service is listed in Table 11.

8. Traffic Signal Warrant Analysis

Traffic signal warrants have been analyzed at the following study area intersection:

North-South Street	East-West Street	Warranted
Santiago Canyon Road	Modjeska Grade Road	NO
	Project Access	NO
	Live Oak Canyon Road	YES

Traffic signal warrants have been performed at the above study area intersection for Existing, Interim, and Buildout Without and With Project traffic conditions. The intersection of Santiago Canyon Road and Live Oak Canyon Road currently warrants a traffic signal based upon existing PM peak hour traffic signal warrant criteria, and is projected to meet warrant criteria in the AM peak hour for Interim (Year 2015) Without Project conditions. All subsequent conditions will continue to meet traffic signal warrant criteria for this intersection. The traffic signal warrant worksheets are included in Appendix J.

It should be noted that for purposes of the traffic signal warrant analyses, Santiago Canyon Road has been classified as rural conditions due to the higher speeds on Santiago Canyon Road and the low population density of the area. As stated in the Caltrans Warrant Criteria, a roadway is considered a rural highway, if the existing posted speed limit or critical speed is greater than 40 mph. This is the case at the intersection of Santiago Canyon Road at Live Oak Road.

6.0 Santiago Canyon Road Analysis

A. Santiago Canyon Road Analysis Evaluation

According to GMP (Growth Management Program) TIM (Transportation Implementation Manual), a special traffic analysis is needed for those projects potentially impacting Santiago Canyon Road. According to the existing TIM, projects that increase existing (at the time the project is proposed), critical movements (the higher of the two directional movements) by 1% or more during the AM or PM peak hour on Santiago Canyon Road are required to perform a level of service (LOS) analysis using the HCM (Highway Capacity Manual) methodology. The analysis shall address project plus existing, project plus interim year projections as determined by the County, in addition to buildout analysis required by General Plan consistency evaluation.

The methodology used to analyze Santiago Canyon Road has been presented in Section 2.0 of this report. Based upon the discussion of appropriate methodologies included in Section 2.0, the volume/capacity method more realistically represents operating conditions on Santiago Canyon Road than the HCM method in this study. The TIM is being proposed to be modified to reflect the volume to capacity methodology for Santiago Canyon Road.

The Saddle Crest project will increase peak hour directional flows on Santiago Canyon Road by over one (1) percent, therefore, the traffic impacts need to be evaluated. As a result of this, the TIM requires the traffic impacts of the project be evaluated for this facility. The TIM also addresses traffic level of service policy for both intersections and roadway segments along Santiago Canyon Road. It specifies, "LOS D as acceptable throughout the County for intersections with the exception of roadway segments on Santiago Canyon Road for which it states, LOS "C" shall be maintained on all uninterrupted links of three miles in length or more on Santiago Canyon Road until such time as uninterrupted segments (i.e. between major signalized intersections) are reduced to less than three miles."

Santiago Canyon Road in the County is an existing high speed two-lane roadway with limited access and no traffic signals throughout its length. It is classified as a primary arterial on the MPAH (Master Plan of Arterial Highways), which would ultimately have a cross-section including two (2) travel lanes in each direction separated by a median. The TIM currently specifies that the Highway Capacity Manual (HCM) is generally used as a technical reference for capacity analysis, which is the source required by the County of Orange TIM.

The section of the HCM manual on two-lane rural highway discusses LOS, not in terms of capacity, but in terms of “percent time spent following” (PTSF). The physical capability of the highway is not used to determine LOS. This is a departure from other roadway level of service analysis procedures addressed in the HCM, which use the actual capacity of the roadway or intersections to determine LOS. The two-lane highway methodology in the HCM essentially addresses rural highways where the driving experience is heavily influenced by the ability to pass slower moving vehicles. Accordingly, a maximum volume for a given LOS is determined rather than the actual capacity. This volume is then related to the “Percent Time Spent Following” to establish the LOS. This distinction between maximum volume and capacity is key importance in the evaluating LOS for Santiago Canyon Road. The ability to pass on the two (2) lane segments of Santiago Road is not valid, since passing is not feasible at most locations.

In the case of Santiago Canyon Road, two opposing flows are separated by double-stripe centerlines, which excludes passing throughout most its entire length. Consequently, the traffic carrying ability of Santiago Canyon Road is not realistically determined by the HCM two-lane methodology, since passing is not possible. Furthermore, the HCM methodology does not account for provisions of left/right turn lanes at intersections, two-way left turn lanes, wide cross-sections, and limited amount of slow moving vehicles (i.e. trucks, RVs), which exist on Santiago Canyon Road. Since Santiago Canyon Road does not fit the basic characteristics of two-lane rural roadway for which the passing methodology is intended as stated in the HCM, a more realistic method practiced by several Cities in the County and

one that follows the County's adopted ICU (volume capacity ratio) methodology that is used for other roadways is more appropriate. As stated in Section 2.0, a more appropriate method of evaluating Santiago Canyon Road is based upon the volume capacity ratio of the facility. The TIM methodology is proposed to be amended with respect to the Santiago Canyon Road analysis.

An evaluation of Santiago Canyon Road based upon the HCM "percentage time spent following" methodology yields unsatisfactory operating conditions (worse than LOS = C) and LOS for existing and future conditions. An evaluation of existing conditions using the HCM "percent time spent following" methodology is included in Appendix K. It does not represent actual field conditions along Santiago Canyon Road. In actuality, this is not the case. RK has analyzed the field conditions by actually comparing travel time runs for Santiago Canyon Road between Live Oak Canyon Road and Modjeska Grade Road near the project site. Although the HCM procedures indicate that this segment is operating at poor conditions, that has not been determined based upon actual travel time runs in the area.

A summary of the travel time runs prepared by RK is shown in Appendix L. Five (5) travel runs in each direction were conducted during the AM and PM peak hours at the segment of Santiago Canyon Road between Live Oak Canyon Road and Modjeska Grade Road. As can be seen for current conditions, the average travel speeds within this segment of uninterrupted roadway segments is 52.4 miles per hour during the AM peak hour and 51.0 miles per hour during the PM peak hour. Based upon criteria included in the HCM would indicate that peak operating conditions are good and an excellent level of service is currently provided. Little if no congestion or obstruction of flow occurs with this average travel speed. As shown in Appendix K, utilizing the "percent time spent following" methodology included in the HCM, this would show a much poorer condition, making travel speeds considerably less. As a result of actual operating conditions on Santiago Canyon Road, the volume capacity methodology is suggested in Section 2.0. This method relates closer to the intersection capacity analysis currently adopted by the

County of Orange for the evaluation of signalized intersections. This method has yielded more realistic results, relating better to actual reality in the field.

B. Santiago Canyon Road Level of Service Analysis

A level of service analysis has been performed based upon the methodology and criteria contained in Section 2.0 of this report. Based upon the volume to capacity ratio in relationship to the actual capacity, the directional lane capacity of Santiago Canyon Road. This has been evaluated for the following conditions:

- Existing
- Existing Plus Project
- Interim (Year 2015) Without Project
- Interim (Year 2015) With Project
- Buildout (Year 2035) With Project
- Buildout (Year 2035) Without Project

As stated, the methodology is consistent with the evaluation procedures included in Section 2.0. The results of this are summarized in Table 10. As shown in Table 10, for existing conditions, Santiago Canyon Road is operating at Level of Service "A" for both northbound and southbound conditions during both the AM and PM peak hour. For existing plus project conditions, Santiago Canyon Road is operating at level of service "A" for both the northbound and southbound directions for both AM and PM peak hour conditions.

For interim (Year 2015) conditions without and with the project, Santiago Canyon Road would operate at level of service "A" in both the northbound and southbound direction during both the AM and PM peak hour.

For County buildout conditions (year 2035), without and with the project, Santiago Canyon Road would operate at level of service "A" or better at both the northbound and southbound direction for both AM and PM conditions.

Based upon this evaluation, Santiago Canyon Road would be operating within the specified level of service C as stipulated by the Transportation Implementation Manual, which is part of Growth Management Program for Orange County. This analysis has shown that the proposed project would not adversely affect the level of service along Santiago Canyon Road and the roadway itself would be operating at acceptable levels of service based upon the Santiago Canyon Road evaluation methodology, which reflects actual, not theoretical, operating conditions which are not appropriate for Santiago Canyon Road.

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7.0 Site Access and On-Site Circulation

A. Site Access

The Saddle Crest Project Site will be served by one (1) full access point onto Santiago Canyon Road. As shown in the site plan on Exhibit B, a curb to curb distance of 50 feet is provided for this access point. A westbound left turn lane and a westbound right turn lane should be provided for traffic exiting the site.

A northbound right turn pocket and a southbound left turn pocket are proposed on Santiago Canyon Road at the project access point. This will provide adequate access to the project from a traffic operations and safety standpoint.

The proposed access is located 1,100 feet from the Mill's property driveway to the west of the project. This distance is sufficient to provide adequate spacing for a right-turn deceleration lane into that project without impacting the project's entry. The location of the Saddle Crest entry/exit street is adequate from a spacing standpoint.

B. On-Site Circulation

Access to the project site will be via Santiago Canyon Road at Project Access, south of Modjeska Grade Road. The entry/exit passage feature is located a minimum of 100 feet from the curb line of Santiago Canyon Road. This distance will more than exceed the Orange County Standard Plan No. 1107 (Appendix M) which requires 100 feet minimum spacing from the entry/exit passage feature to the curb face of the adjacent street. Sixty-five single family dwelling units will be served via the restricted project access road.

Sight distance at the project intersection with Santiago Canyon Road has been reviewed and is adequate with a minor trimming of existing landscaping which encroaches into the public right-of-way on the south side of Santiago Canyon Road. The horizontal sight distance analysis, per the County's Plan No. 1107, is included in Exhibit M. Hunsaker & Associates Irvine, Inc. has prepared a vertical sight line analysis at the project street and Santiago Canyon Road. This analysis is shown in Exhibit N and shows that the vertical sight distance is adequate.

C. Gateway Queuing Analysis

The Orange County Standard Plan No. 1107 has been analyzed and compared to the proposed project's site plan with regards to gated entryways. According to Standard Plan No. 1107, entry gates shall be set back from the near curb line of any public street to provide a minimum 100 feet of storage for entering vehicles to stack without interfering with through traffic. An estimated worst case total length of the queue would be 65 feet during peak hours. The proposed gate is located a minimum of 100 feet from Santiago Canyon Road. Therefore, the gateway (entry/exit passage feature) location is adequate to allow for vehicles to queue without stacking onto Santiago Canyon Road.

8.0 Findings and Recommendations

A. Intersection Analysis Summary

A summary of the level of service analysis for each condition is included in Table 9.

For existing and existing plus project traffic conditions, all study area intersections are currently operating at acceptable levels of service.

The proposed development is projected to generate approximately 780 trip-ends per day, with 58 vehicles per hour during the AM peak hour and 78 vehicles per hour during the PM peak hour. No trip credit has been taken for the existing land use.

For Interim (Year 2015) Without Project traffic conditions, all study area intersections are projected to operate at acceptable levels of service during peak hours except for the following intersections:

North-South Street	East-West Street	LOS	
		AM	PM
Portola Pkwy. / Santa Margarita Pkwy.	El Toro Road	B	F

For Interim (Year 2015) With Project traffic conditions, all study area intersections are projected to operate at acceptable levels of service during peak hours except for the following intersections:

North-South Street	East-West Street	LOS	
		AM	PM
Portola Pkwy. / Santa Margarita Pkwy.	El Toro Road	B	F

However, the project does not have a significant impact on this intersection, therefore, no project improvements are necessary.

For Buildout (Year 2035) Without Project traffic conditions, all study area intersections are projected to operate at acceptable levels of service during peak hours except for the following intersections:

North-South Street	East-West Street	LOS	
		AM	PM
Santiago Canyon Road	Live Oak Canyon Road	F	F
Santiago Canyon Road / El Toro Road	Glenn Ranch Road	C	F
Portola Pkwy. / Santa Margarita Pkwy.	El Toro Road	E	F

For Buildout (Year 2035) With Project traffic conditions, all study area intersections are projected to operate at acceptable levels of service during peak hours except for the following intersections:

North-South Street	East-West Street	LOS	
		AM	PM
Santiago Canyon Road	Live Oak Canyon Road	F	F
Santiago Canyon Road / El Toro Road	Glenn Ranch Road	D	F
Portola Pkwy. / Santa Margarita Pkwy.	El Toro Road	E	F

Based on the County's criteria for significance, the project contributes to an existing projected significant impact for Buildout (Year 2035) conditions at the intersections of Santiago Canyon Road at Live Oak Canyon Road and Santiago Canyon Road/El Toro Road at Glenn Ranch Road. However, a list of feasible mitigation measures needed to restore the level of service at the intersection back to acceptable levels is listed in Table 11.

The internal circulation provided on the Site Plan is adequate to meet the County of Orange standards if the recommendations included in this report are implemented.

B. Santiago Canyon Road Analysis

The methodology used for analyzing level of service on Santiago Canyon Road is described in Section 2.0 based upon the proposed TIM amendment using the Volume/Capacity criteria and the results are shown in Table 10. All study segments along Santiago Canyon Road are projected to operate at a LOS of A for Interim (Year 2015) and Buildout (Year 2035) without and with project conditions. Based upon the existing TIM methodology, some segments of Santiago Canyon Road are operating at LOS D which does not reflect actual operating conditions.

C. Proposed Mitigation Measures

A summary of the roadway improvements that are necessary to meet level of service standards for Buildout (Year 2035) without and with Project conditions are summarized in Table 11.

The proposed mitigation measures for Buildout (Year 2035) With Project conditions are graphically summarized on Exhibit M.

D. Related Plans and Programs

The following are plans or programs which affect the study area circulation system.

The County of Orange General Plan: The Transportation Element contains three components: Circulation Plan, Bikeway Plan, and Scenic Highway Plan. Each

component identifies transportation goals, objectives, policies, and implementation programs for transportation within the unincorporated area of the County.

Growth Management Element: The purpose of the Growth Management Element (as adopted by the board of Supervisors in October 1993) is “to mandate that growth and development be based upon the County’s ability to provide an adequate circulation system” as well as other support services and facilities. The implementation Manual (Reference 6 in Chapter 1.0) describes the procedures to evaluate traffic impacts.

Foothill/Trabuco Specific Plan: The circulation Plan for the Foothill/Trabuco Specific Plan (F/TSP) identifies improvements that are necessary to support the level of development permitted by the Land Use Plan. The Circulation Component outlines requirements for safety improvements, monitoring and road fee programs. The F/TSP also includes a phasing component, which specifies that development within the F/TSP areas be consistent with the Growth Management Plan (GMP) Element and Traffic Level of Service Policy.

E. Road Fee Programs

In accordance with the County’s General Plan and the F/TSP, the project is subject to three established Road Fee Programs as summarized below.

<Table shown on following page>

Roadway Fee Programs	
Programs	Cost
Foothill/Eastern Transportation Corridor Road Fee Program – Zone A	\$4,976 / SFD
Foothill Circulation Phasing Plan (non-participating FCPP Landowners) – Zone 4	\$3,578 / SFD
Santiago Canyon Road Major Thoroughfare and Bridge Fee Program and Safety Improvement Program	\$662 / SFD

F. Circulation Recommendations

1. On-Site

- I. Construct the on-site circulation system per the detailed site plan.
- II. Provide the following project access points on Santiago Canyon Road:
 - a. Project Access – full access.
- III. Install stop signs, stop bars and stop legends at Project Access.

2. Area-Wide

- I. Complete any remaining street half-section improvements on Santiago Canyon Road, directly adjacent to the project boundaries. This should include the following:
 - i. Santiago Canyon Road (NS) at Project Access (EW):
 1. Install one (1) exclusive NB right turn pocket and one (1) exclusive SB left turn pocket on Santiago Canyon Road. The turn pockets shown on the Tentative Tract Map include 300 feet of storage which is more than sufficient storage to accommodate

the traffic generated by the project. Furthermore, they provide additional distance for vehicle deceleration for both left and right turning vehicles.

2. Install one (1) WB right turn lane and one (1) WB left turn lane for traffic exiting the project site.
- II. The recommendations for Buildout (Year 2035) With Project are summarized on Exhibit O and Table 11. It should be noted that these improvements are not needed for near-term conditions and may not be required in the future depending upon actual development and growth in traffic in the area. The Santiago Canyon Road Major Thoroughfare and Bridge Fee Program can also help fund these improvements. A detailed cost estimate for intersection improvements is shown in Appendix N.
- III. As detailed in Table 11, the project should participate in the installation of the following off-site improvements:
- i. Santiago Canyon Road (NS) at Live Oak Canyon Road (EW):
 1. Install traffic signal and interconnect devices.
The project's "fair share" cost of this improvement is \$9,737.
 - ii. Santiago Canyon Road/El Toro Road (NS) at Glenn Ranch Road (EW):
 1. Restripe existing roadway to provide an additional EB left turn lane on Glenn ranch Road.
 2. Restripe Santiago Canyon Road to provide a NB receiving lane.
The project's "fair share" cost of this improvement is \$196.
- IV. Traffic signing/stripping should be implemented in conjunction with detailed construction plans for the project site.
- V. At the time of building permits, the project should pay the appropriate road fees as noted in Section 8.0 of this report.

3. Fair Share Analysis

Table 12 shows the fair-share analysis at each of the study area intersections. As shown in Table 12, the project's anticipated traffic contribution to the study area intersections ranges between 2.93% and 7.03% for the Buildout (Year 2035) With Project conditions.

G. Intersection Sight Distance, Safety and Operational Improvements

The driveways should maintain a clear line of sight for vehicles leaving the site as required by the County of Orange standards. Trees, bushes and architectural décor should yield to the line of sight requirements.

As is the case for any roadway design, the County of Orange should periodically review traffic operations in the vicinity of the site once the project is constructed to assure that the traffic operations are satisfactory.

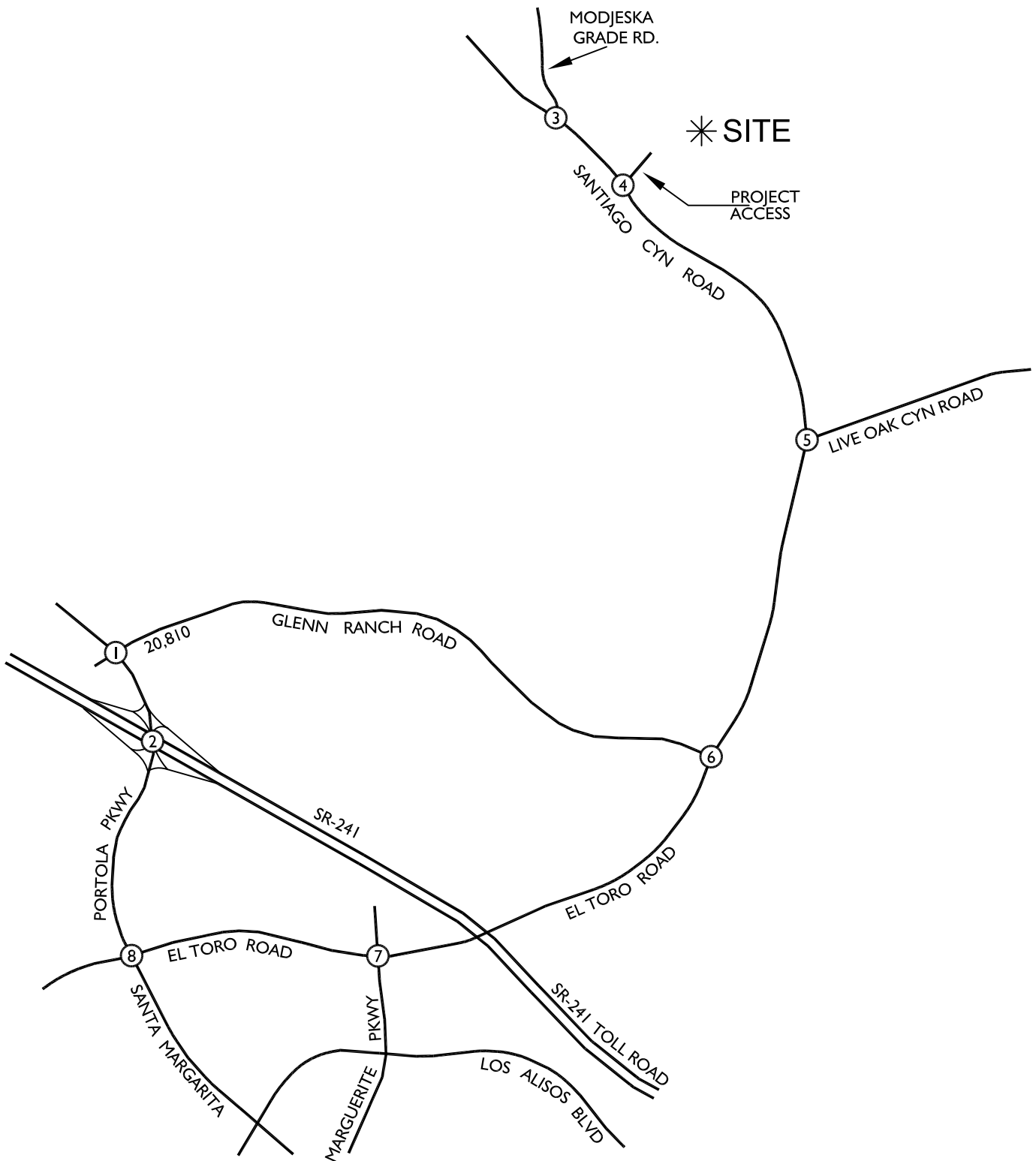
H. Conclusions

Based upon this traffic study, the proposed Saddle Crest development can be accommodated in the County of Orange, given that the improvements listed in this report are implemented.

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Exhibits

Exhibit A Location Map



Legend:

① = Study Area Intersections

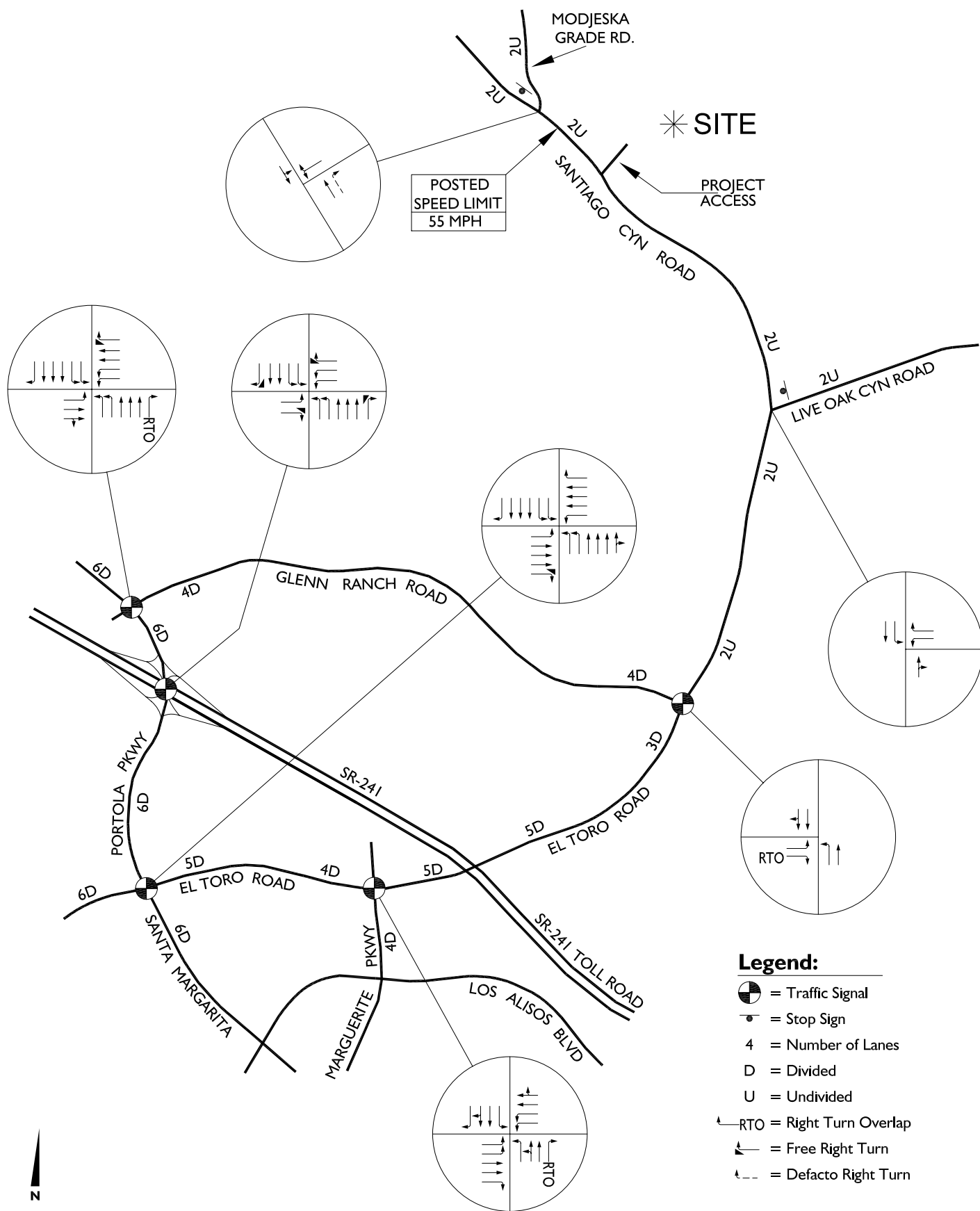
Exhibit B
Site Plan



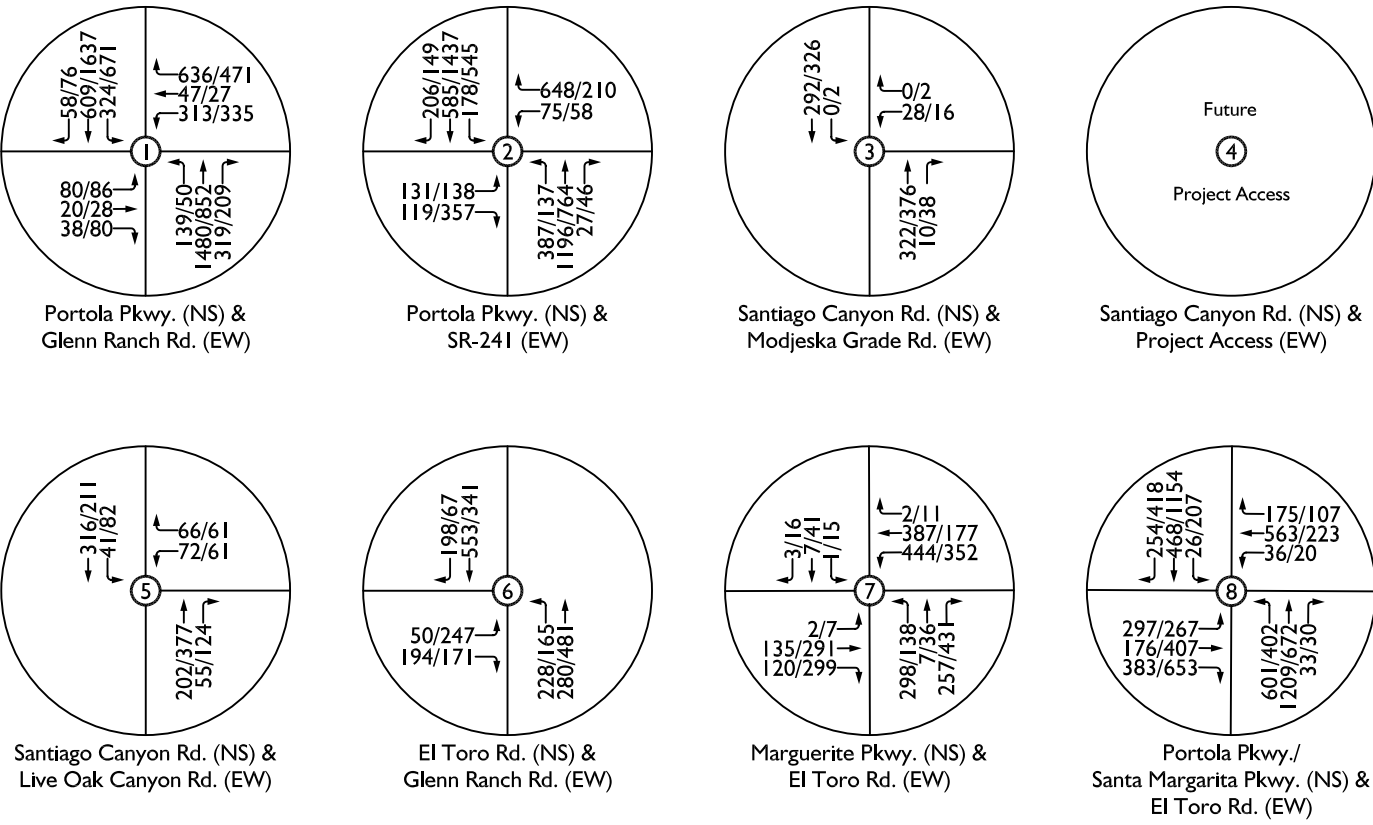
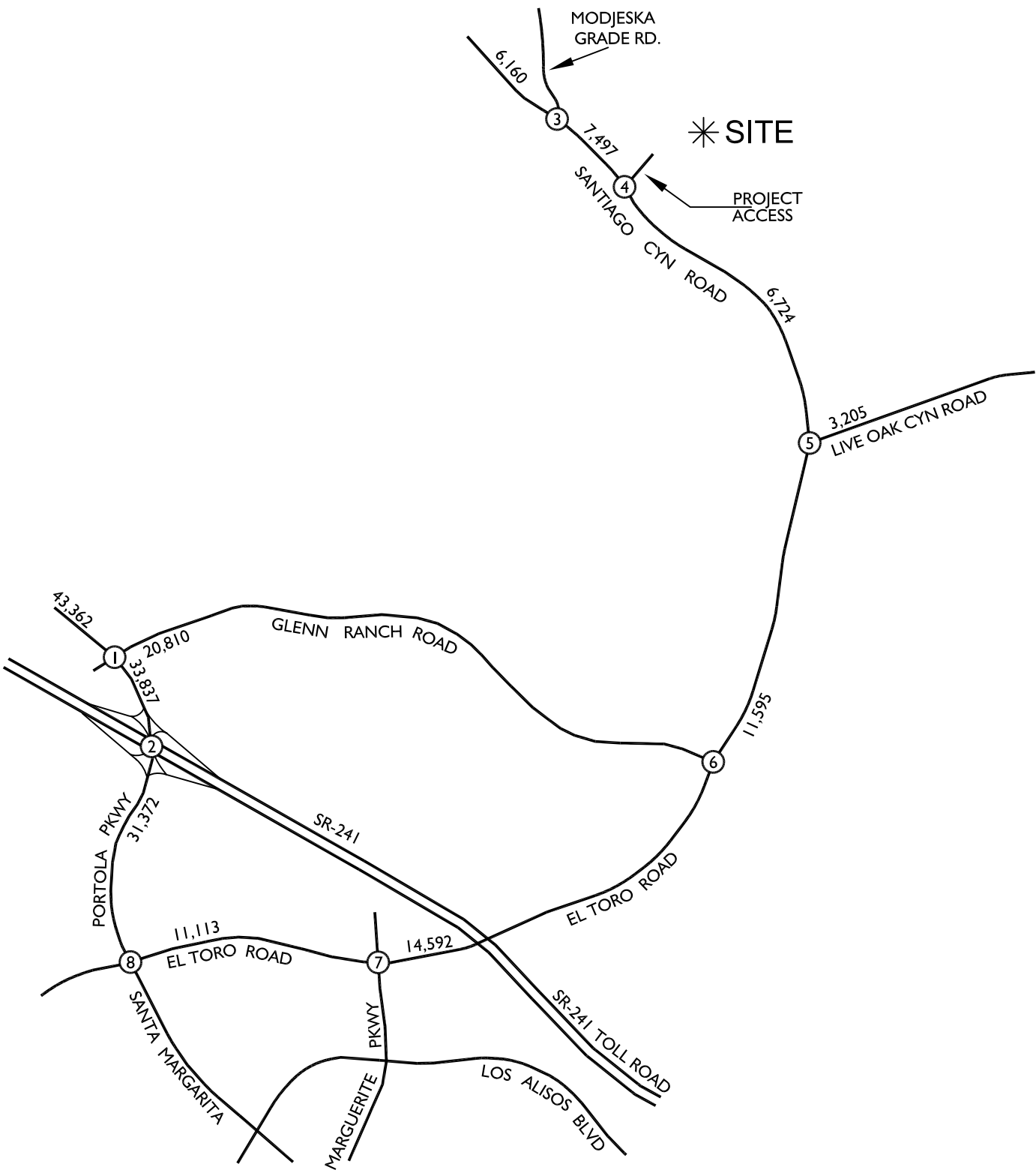
Sheet 2



Existing Lane Geometry and Intersection Controls



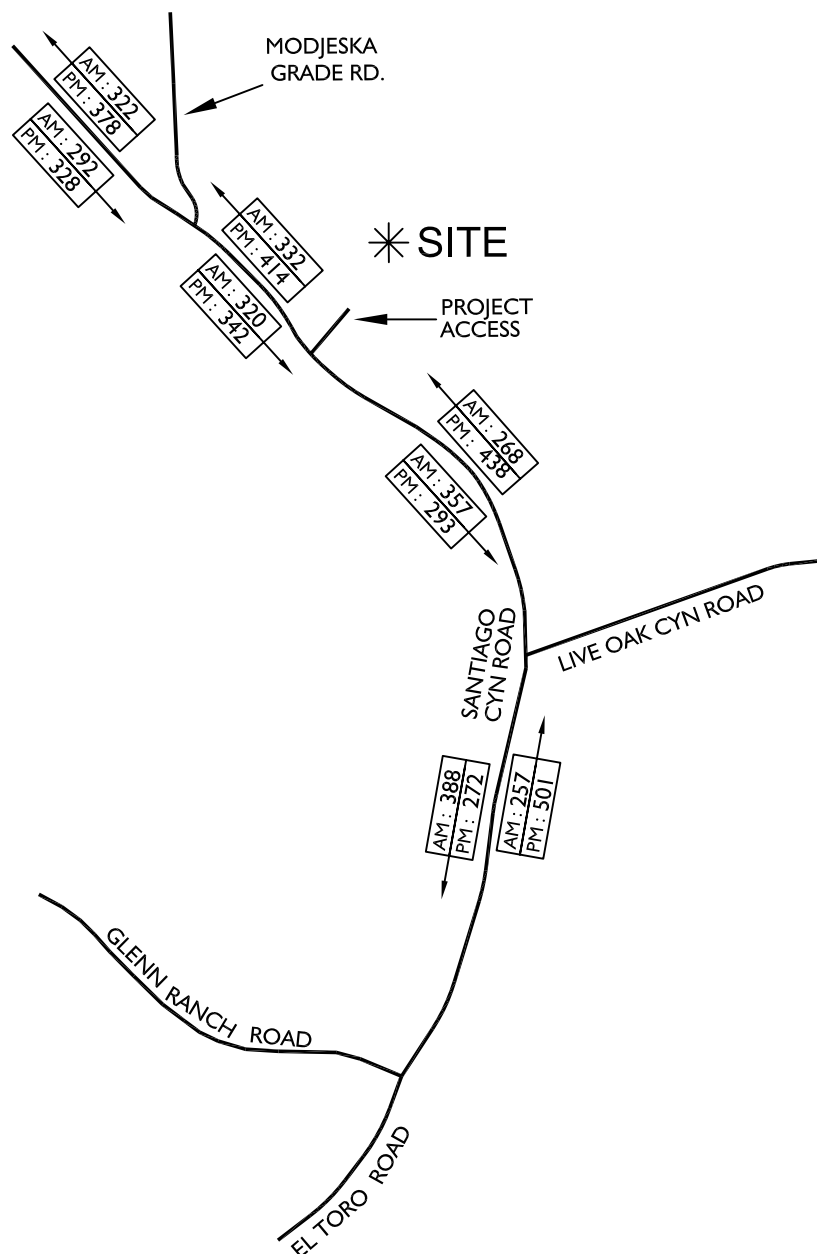
Existing Peak Hour Intersection Volumes
and Average Daily Traffic (ADT)



Legend:
① = Study Area Intersection
10/20 = AM/PM Peak Hour Volumes
10,000 = Average Daily Traffic



Santiago Canyon Road Existing Peak Hour Roadway Segment Volumes



Legend:

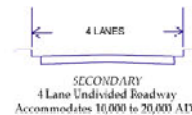
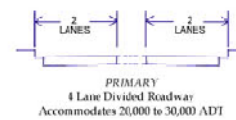
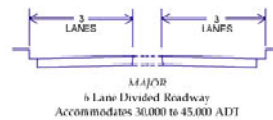
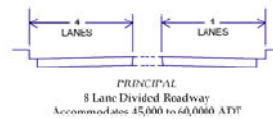
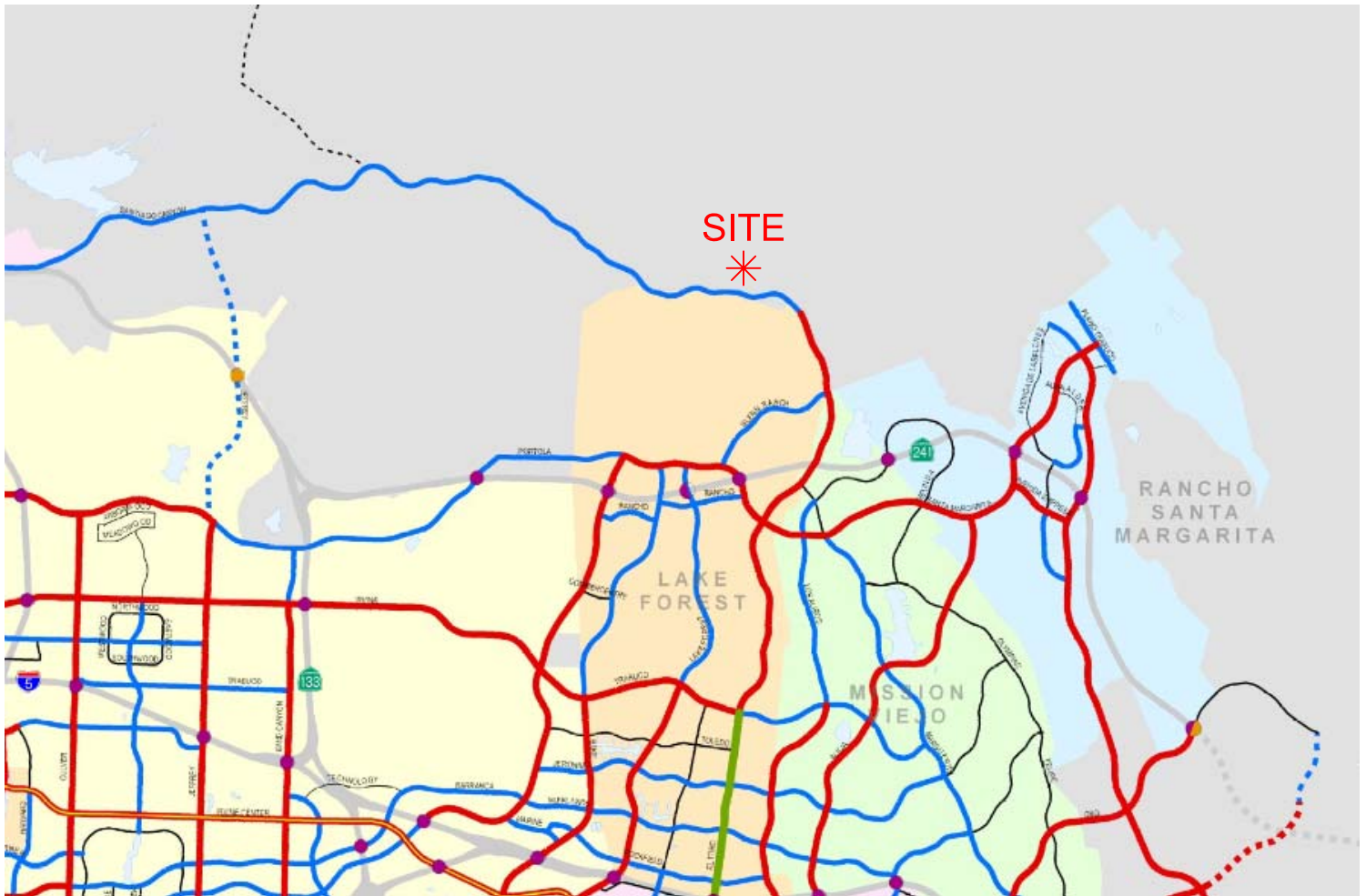
←

AM: 322
PM: 378

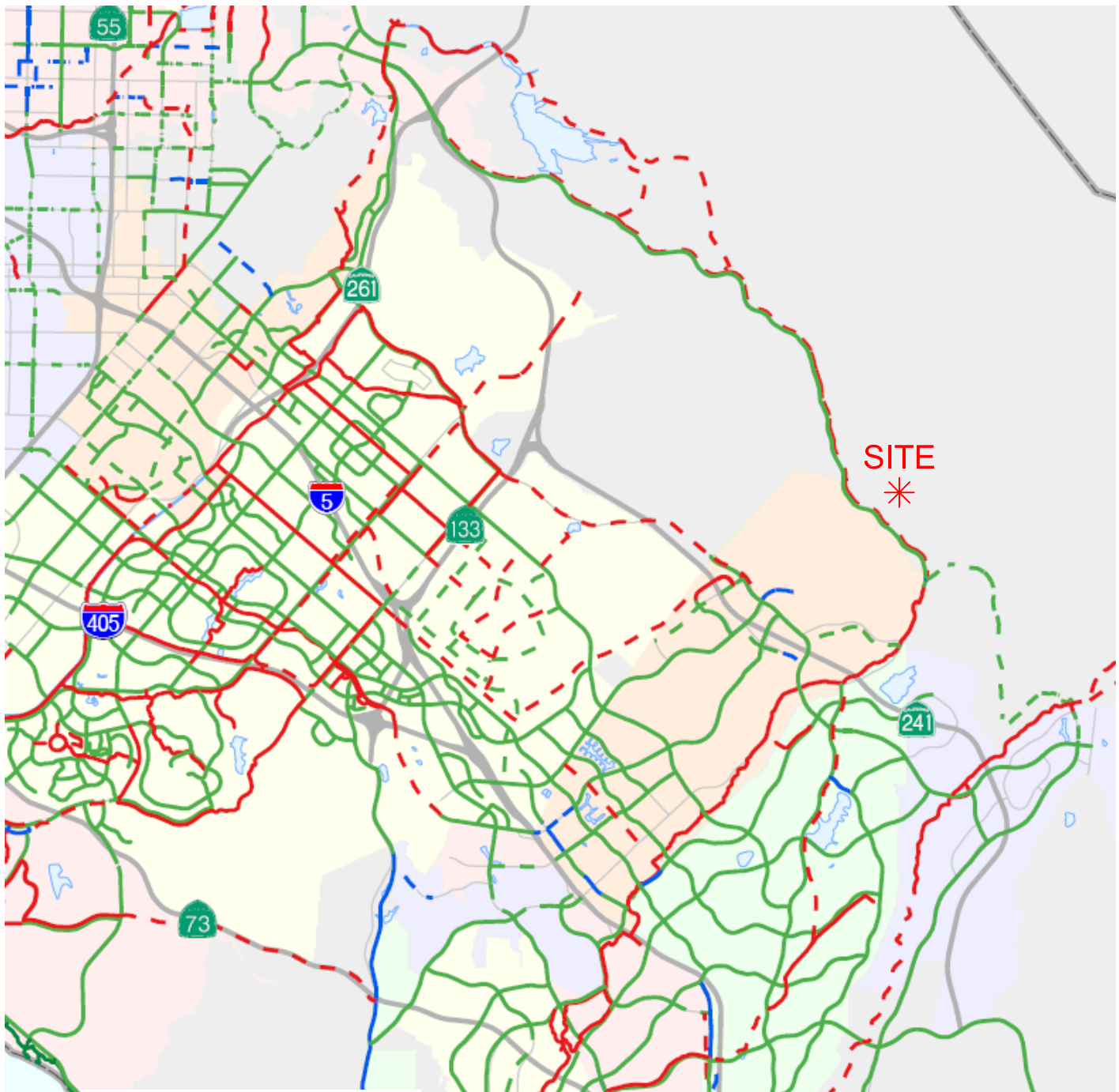
 = Peak Hour Directional Traffic



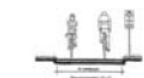
Orange County Transportation Authority (OCTA) Master Plan of Arterial Highways and Roadway Cross Sections



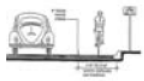
Orange County Transportation Authority (OCTA) Existing and Proposed Bikeways



Bikeways



Class I :
Off Road Paved



Class II :
On Road Striped



Class III :
On Road Not Striped

— Class I Existing

- - - Class I Proposed

— Class II Existing

- - - Class II Proposed

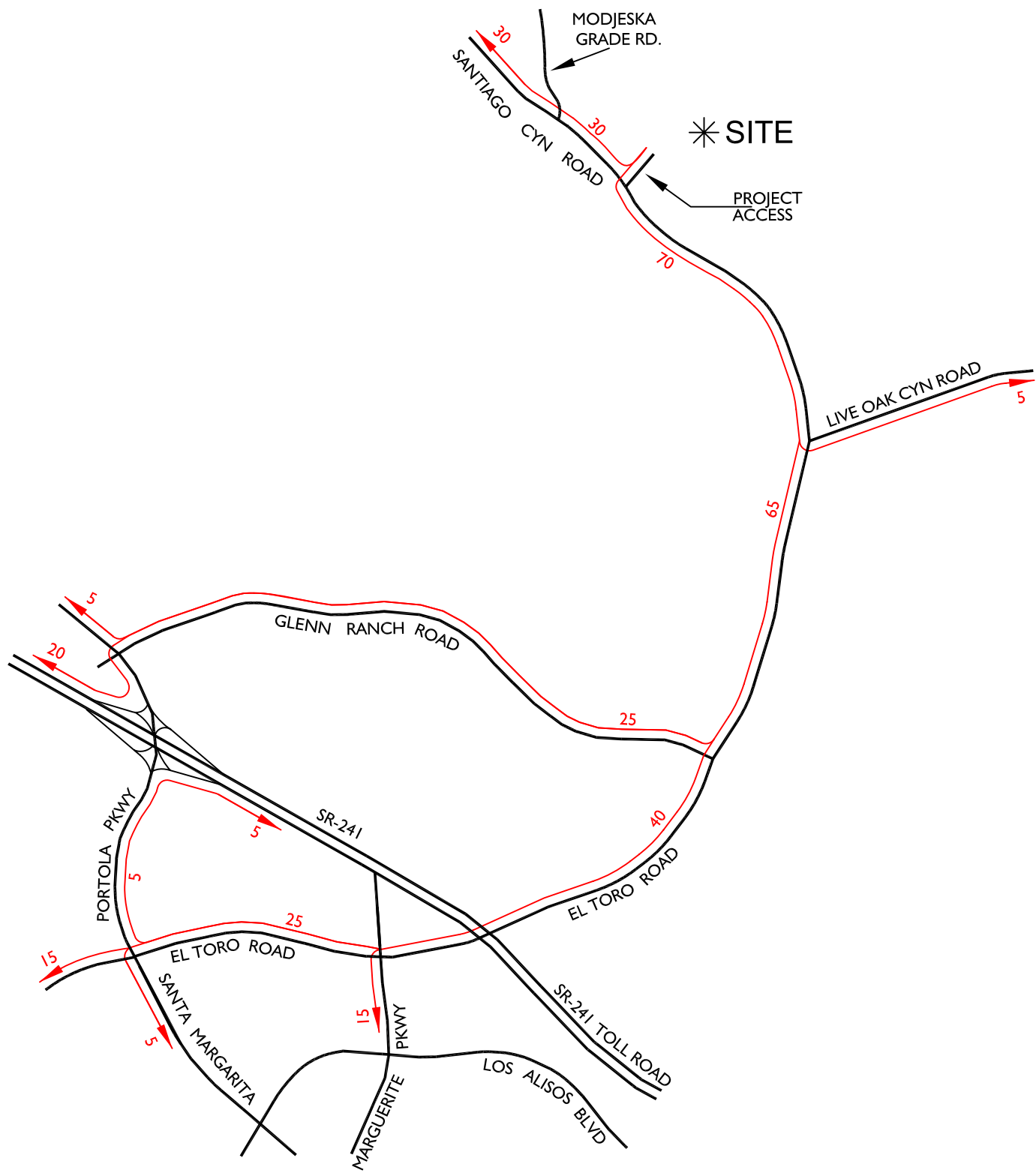
— Class III Existing

- - - Class III Proposed



Exhibit F

Project Trip Distribution



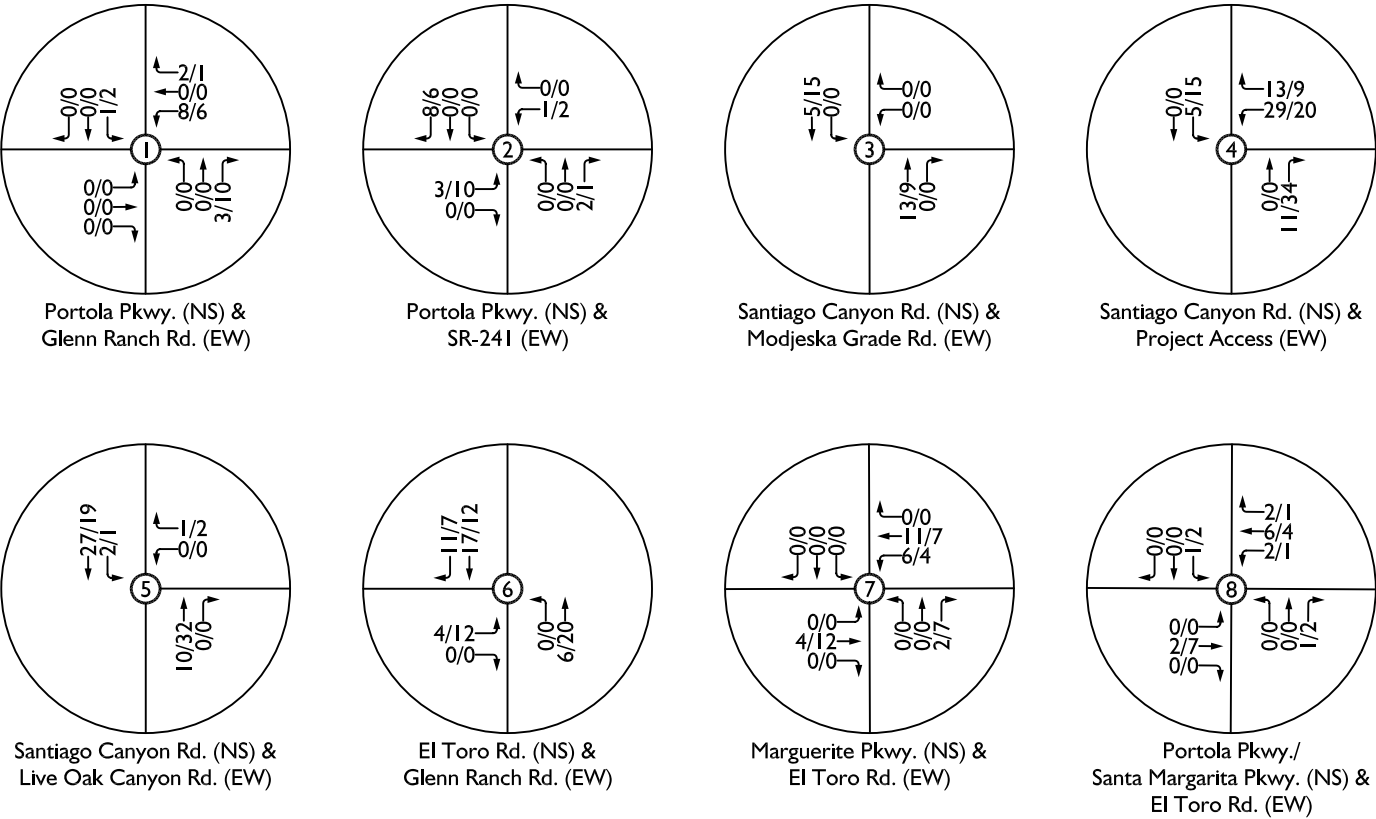
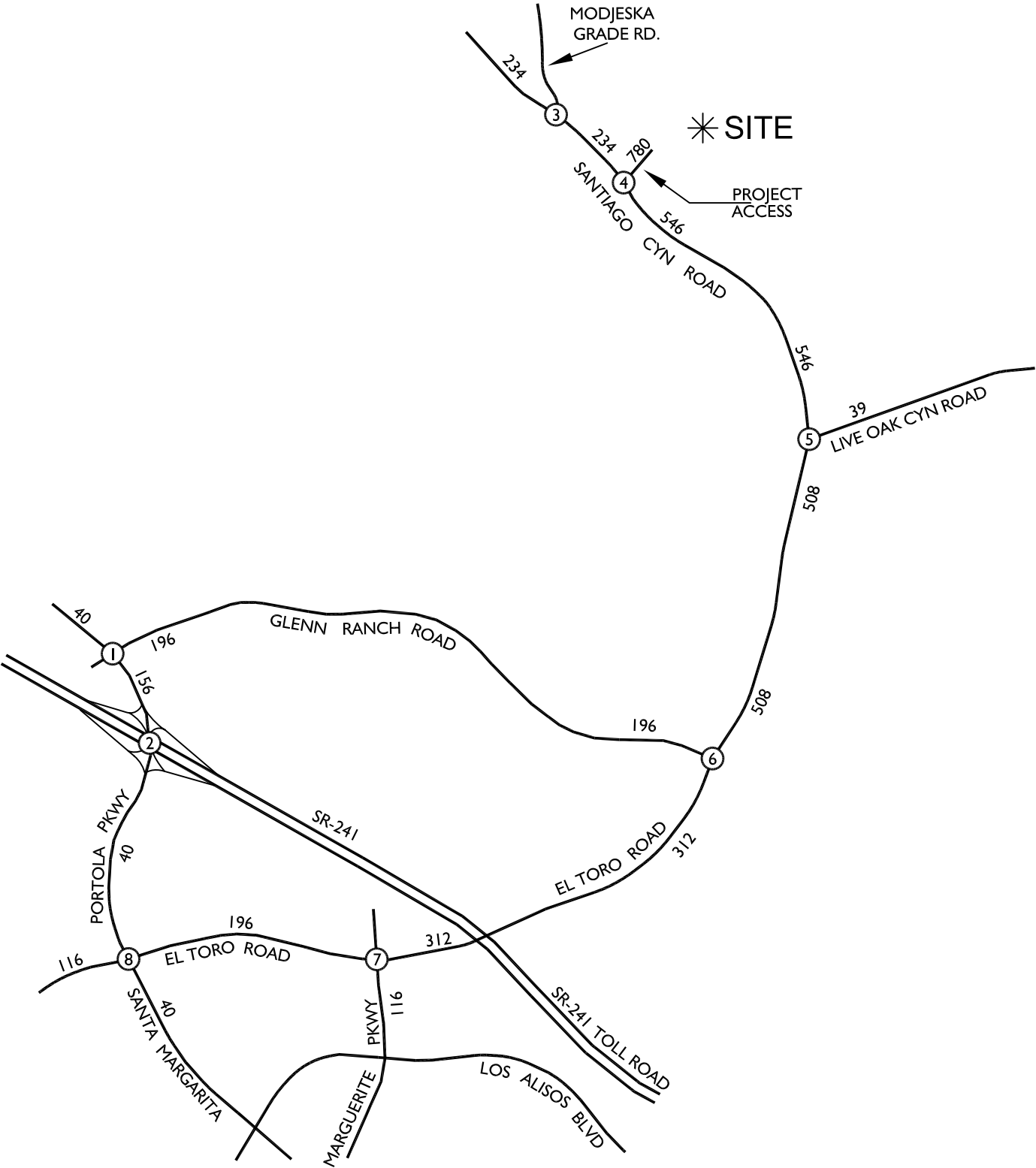
Legend:

IO = Percent to/from Project



Exhibit G-I

Project Peak Hour Intersection Volumes
and Average Daily Traffic (ADT)

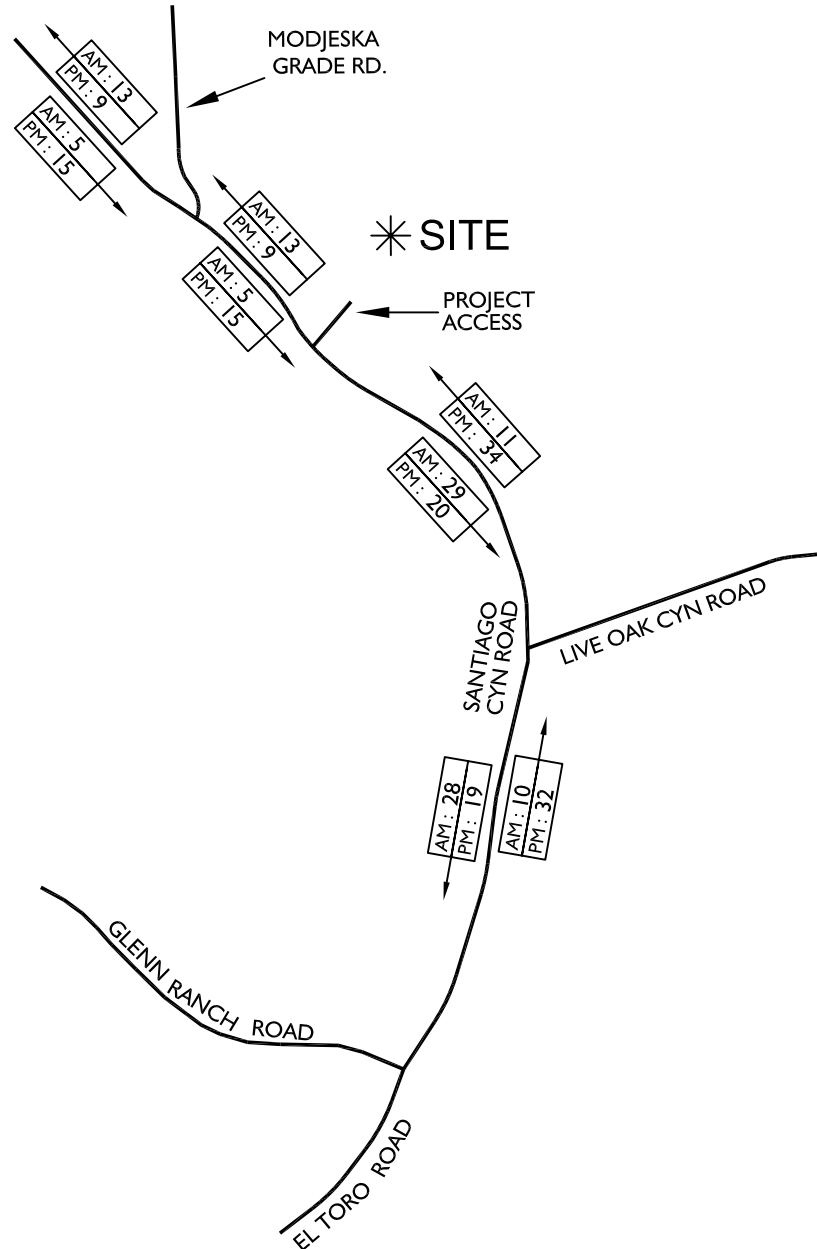


Legend:

- ① = Study Area Intersection
- 10/20 = AM/PM Peak Hour Volumes
- 100 = Average Daily Traffic



Project Peak Hour Roadway Segment Volumes along Santiago Canyon Road



Legend:

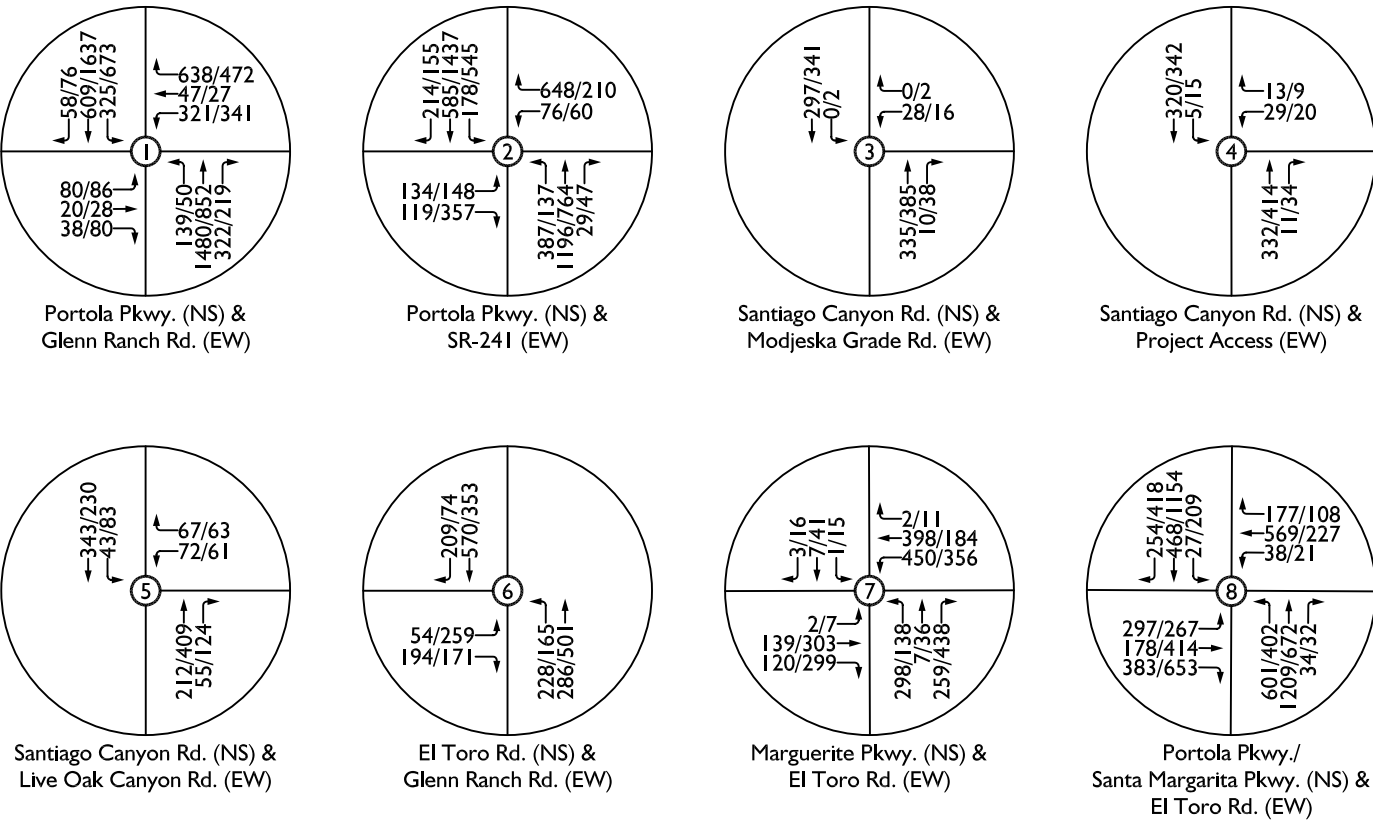
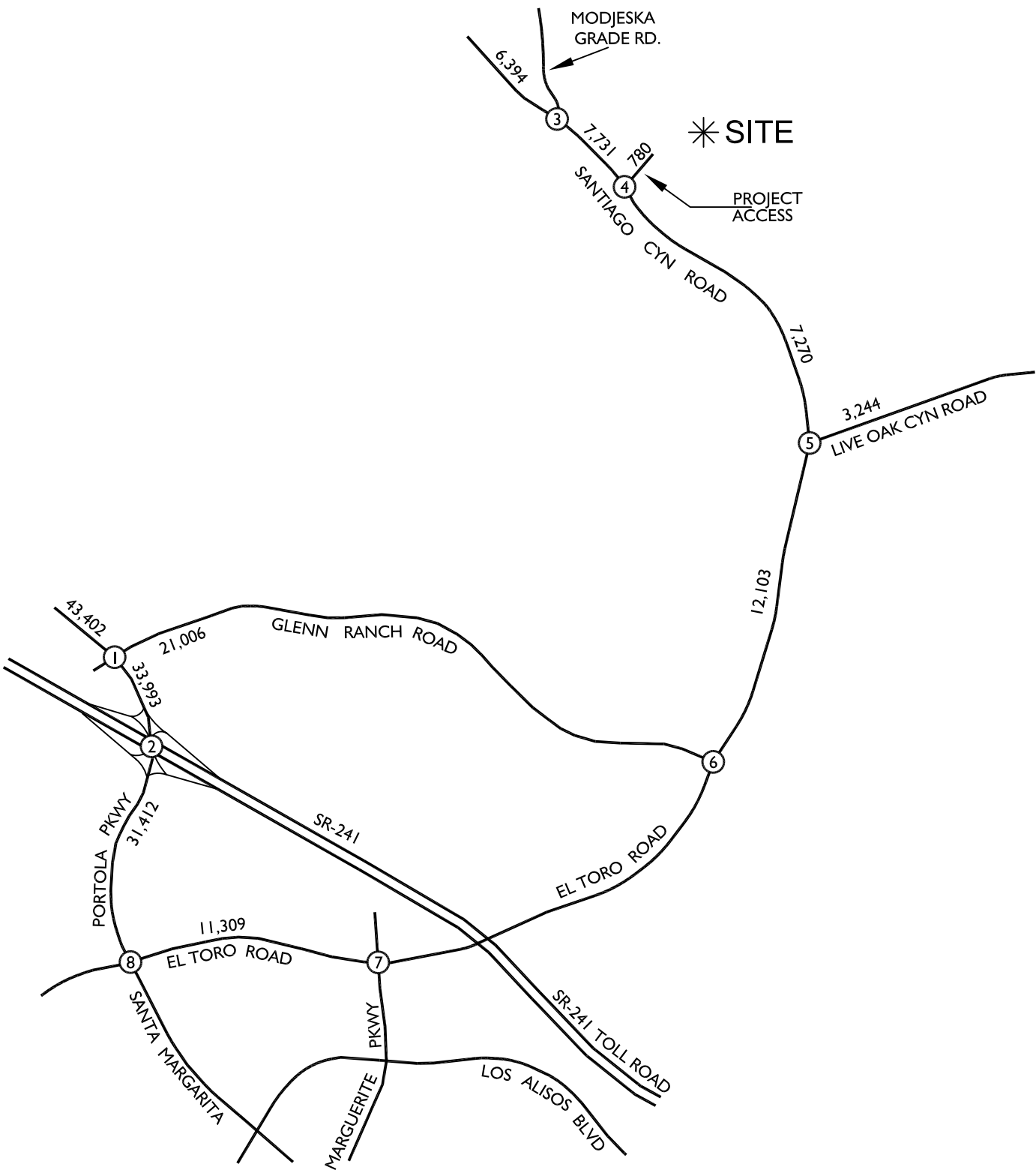
←

AM: 13
PM: 9

 = Peak Hour Directional Traffic



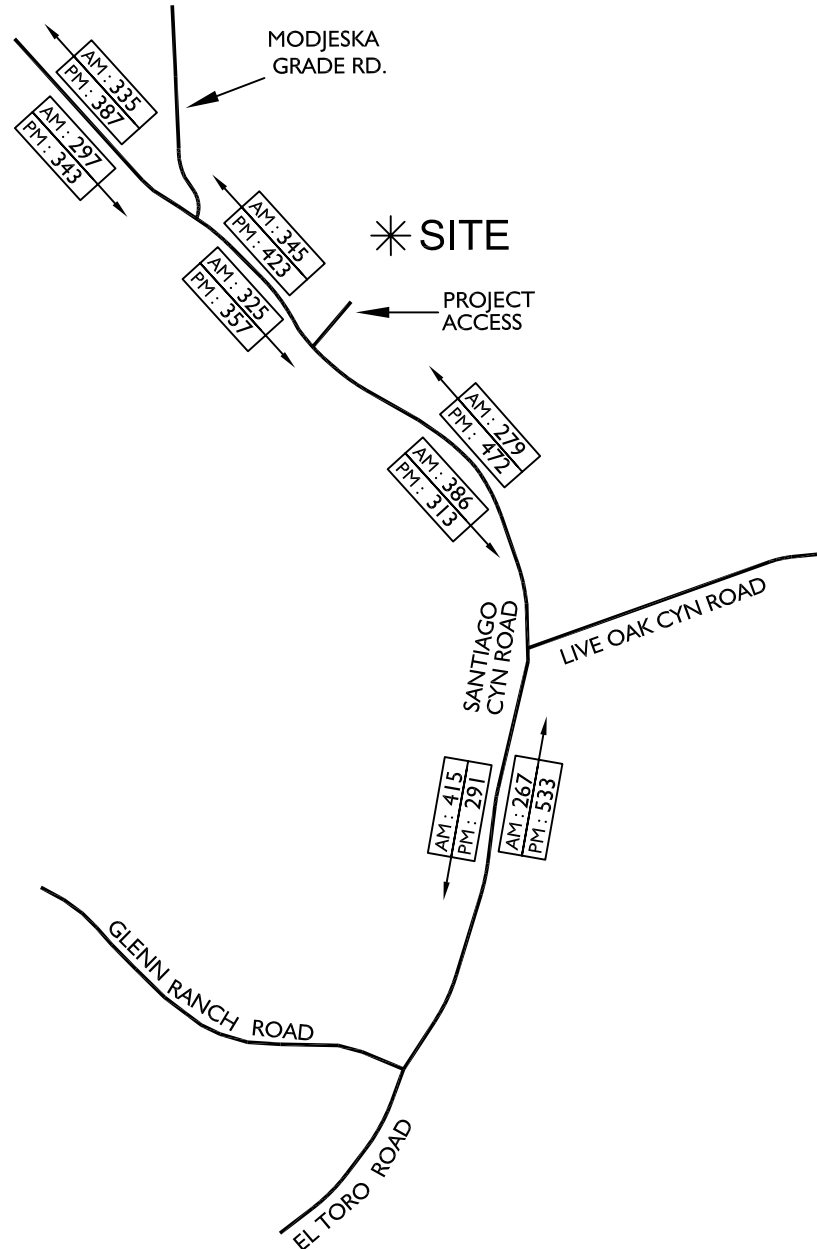
Existing Plus Project Peak Hour Intersection Volumes
and Average Daily Traffic (ADT)



Legend:
① = Study Area Intersection
10/20 = AM/PM Peak Hour Volumes
10,000 = Average Daily Traffic



Existing Plus Project Peak Hour Roadway Segment Volumes along Santiago Canyon Road



Legend:

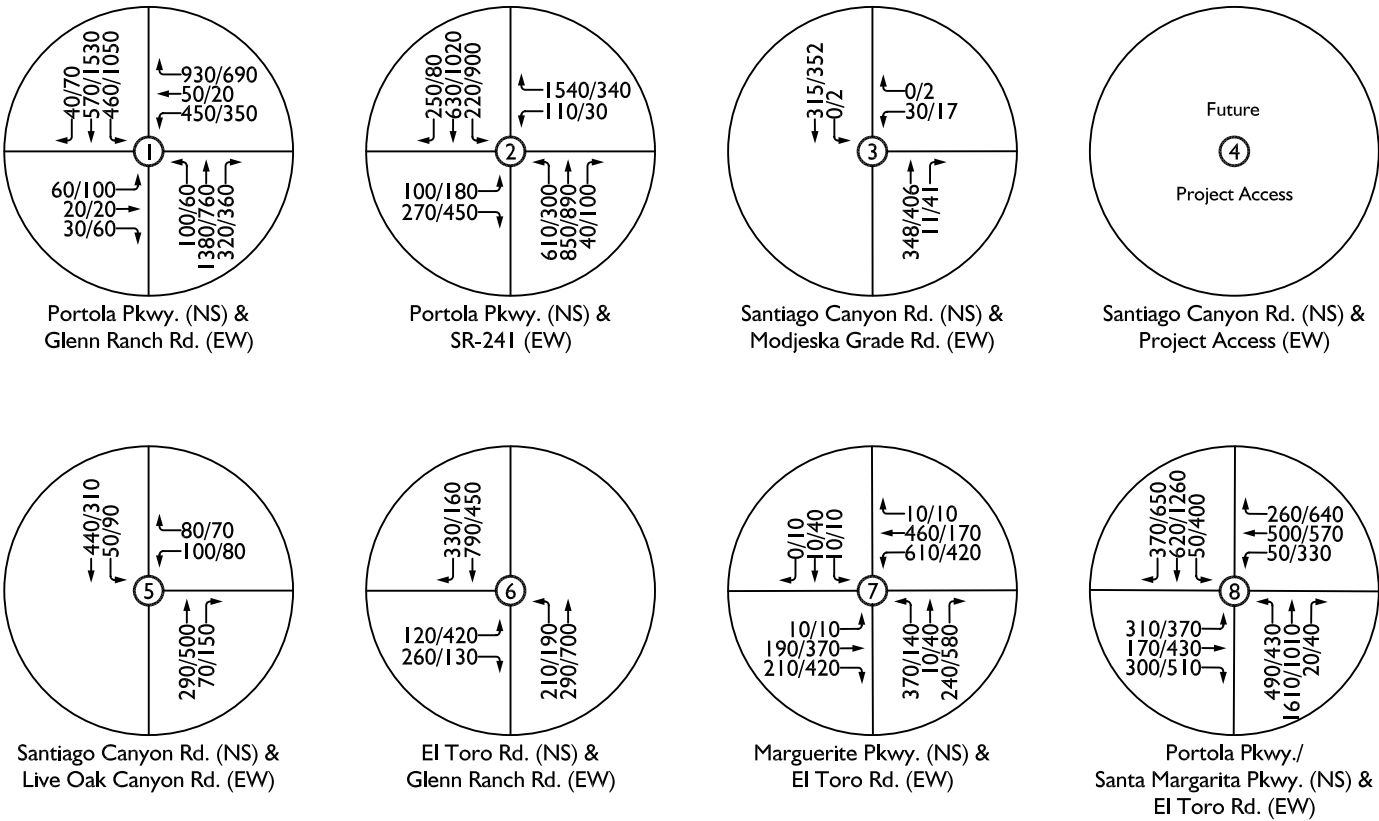
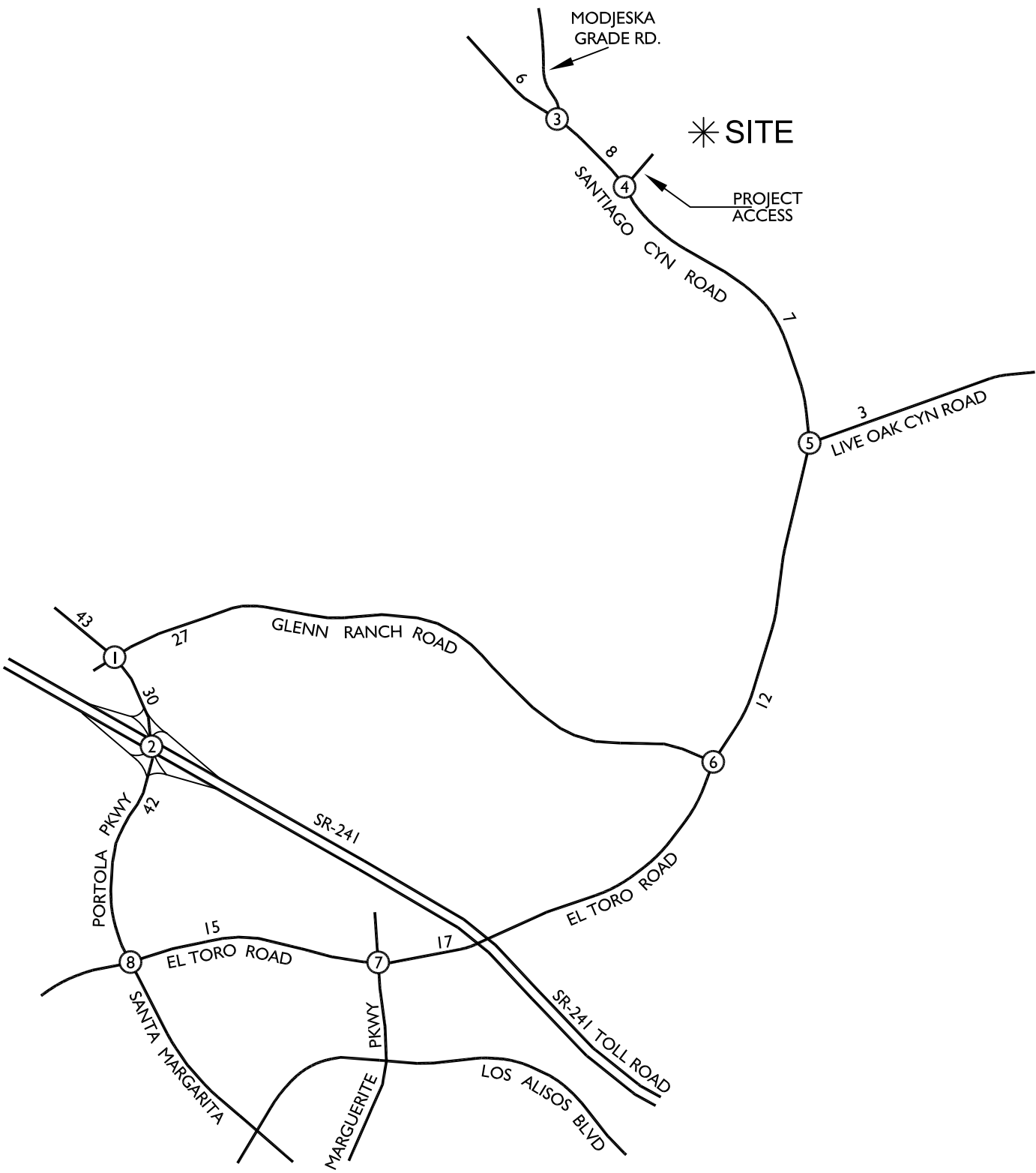
←

AM: 335
PM: 387

 = Peak Hour Directional Traffic



Interim Year (Year 2015) Without Project
Peak Hour Intersection Volumes and Average Daily Traffic (ADT)

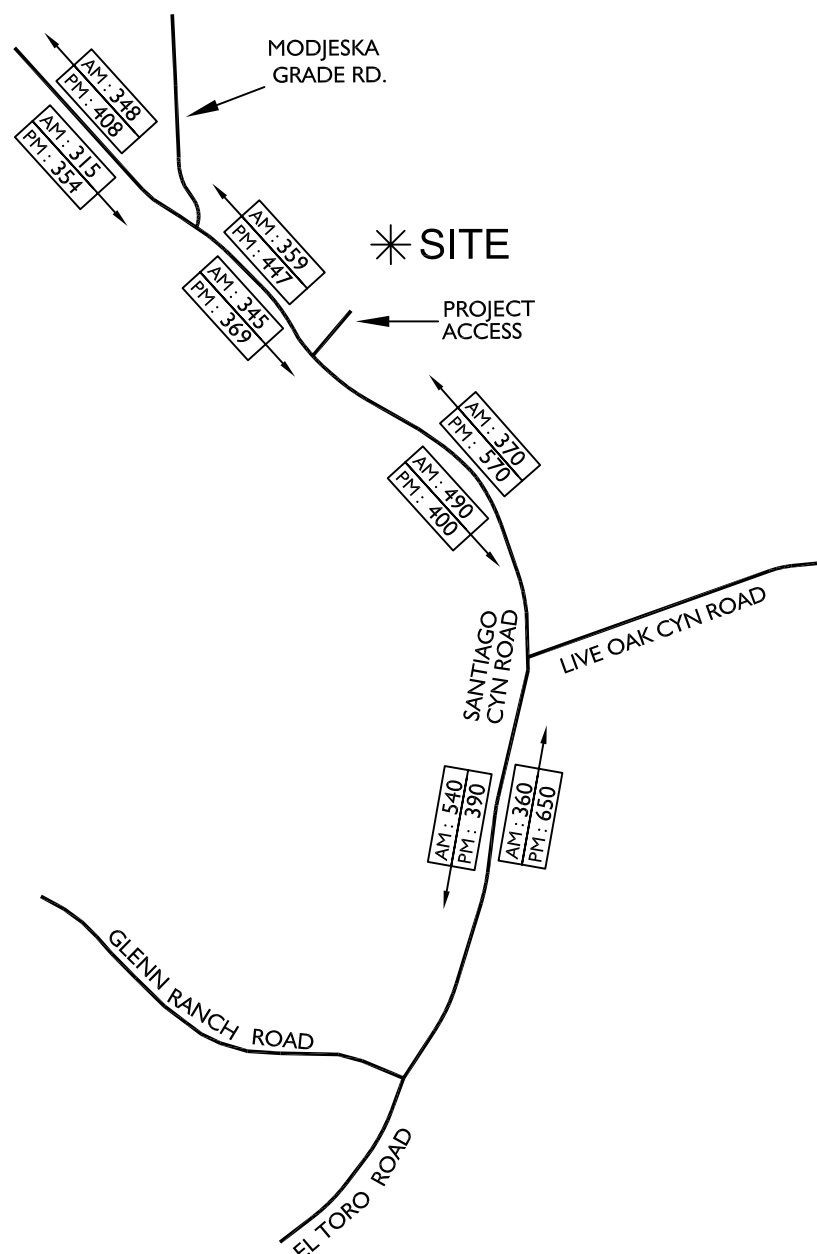


Legend:

- ① = Study Area Intersection
- 10/20 = AM/PM Peak Hour Volumes
- 10 = Average Daily Traffic (1,000s)

Note:
Interim (Year 2015) traffic volumes and ADTs are from Austin-Foust Associates, Inc. Saddle Crest Traffic Forecast Data, except for the intersection of Santiago Canyon Road and Modjeska Grade Road. Traffic volumes for this intersection were calculated using a 2% growth rate per year based on existing traffic volumes counted by RK in May 2011.

Interim Year (2015) Without Project Peak Hour Roadway Segment Volumes along Santiago Canyon Road



Legend:

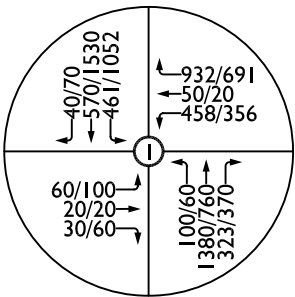
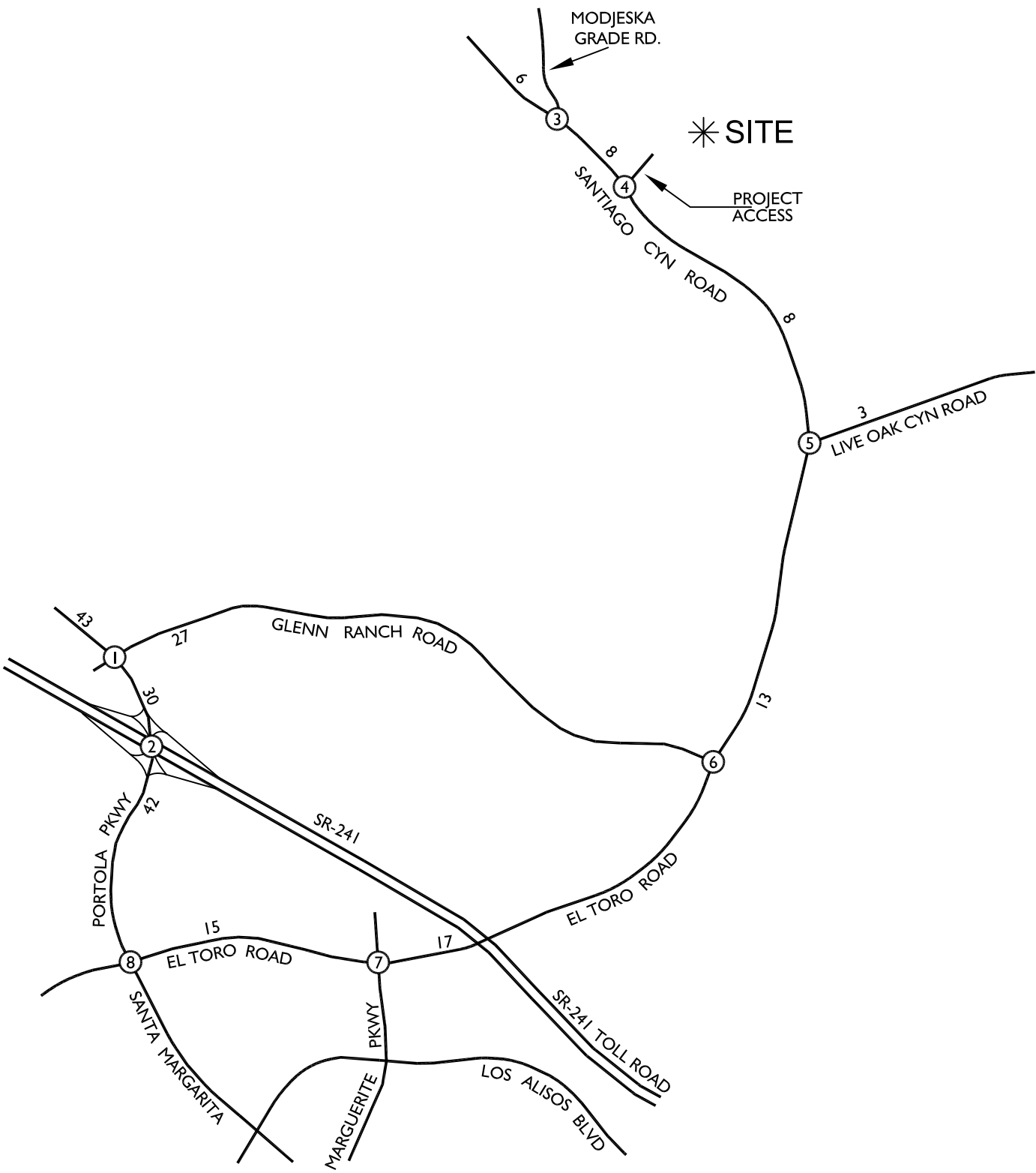
←

AM: 360
PM: 650

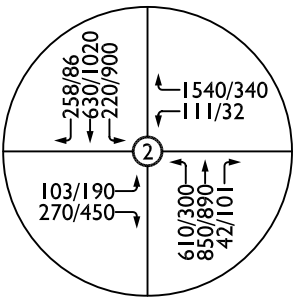
 = Peak Hour Directional Traffic



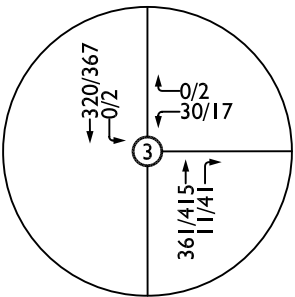
Interim Year (Year 2015) With Project
Peak Hour Intersection Volumes and Average Daily Traffic (ADT)



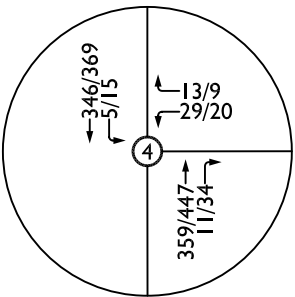
Portola Pkwy. (NS) & Glenn Ranch Rd. (EW)



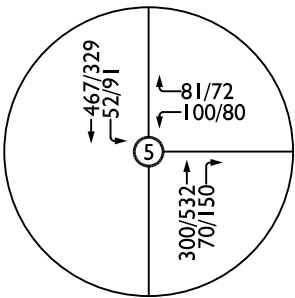
Portola Pkwy. (NS) & SR-241 (EW)



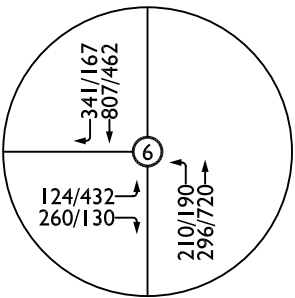
Santiago Canyon Rd. (NS) & Modjeska Grade Rd. (EW)



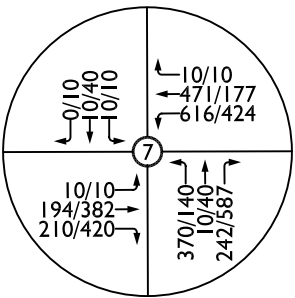
Santiago Canyon Rd. (NS) & Project Access (EW)



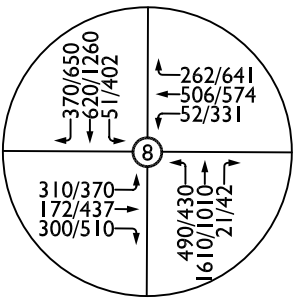
Santiago Canyon Rd. (NS) & Live Oak Canyon Rd. (EW)



El Toro Rd. (NS) & Glenn Ranch Rd. (EW)



Marguerite Pkwy. (NS) & El Toro Rd. (EW)



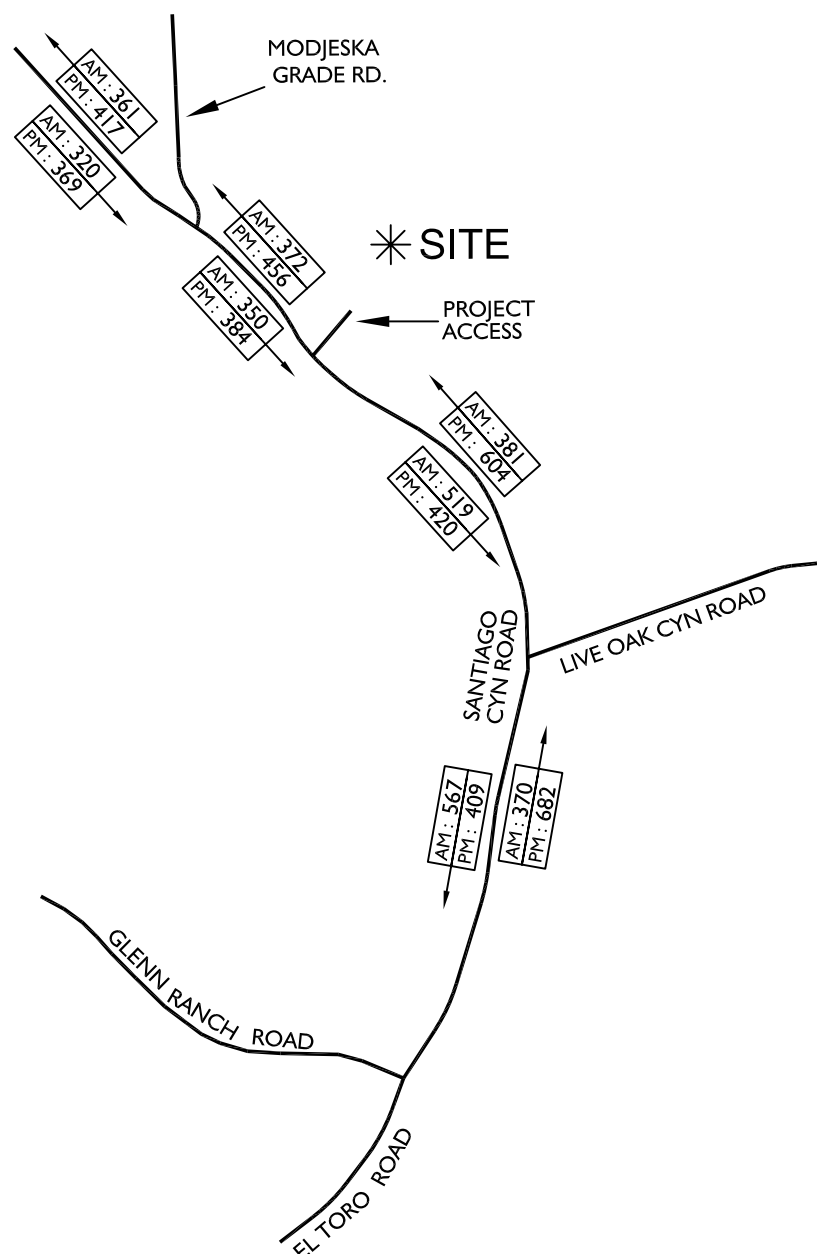
Portola Pkwy./ Santa Margarita Pkwy. (NS) & El Toro Rd. (EW)

Legend:

- ① = Study Area Intersection
- 10/20 = AM/PM Peak Hour Volumes
- 10 = Average Daily Traffic (1,000s)



Interim Year (2015) With Project Peak Hour Roadway Segment Volumes along Santiago Canyon Road



Legend:

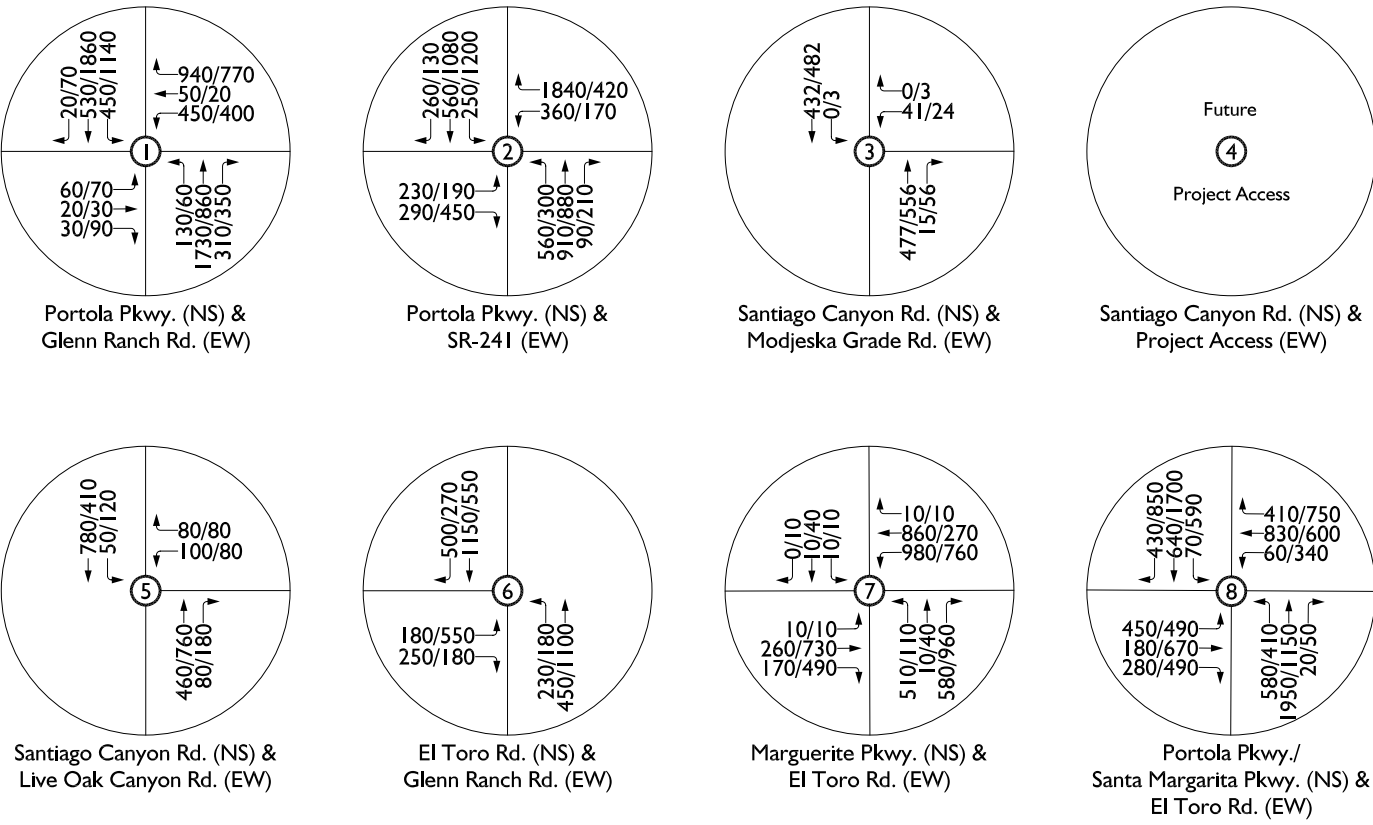
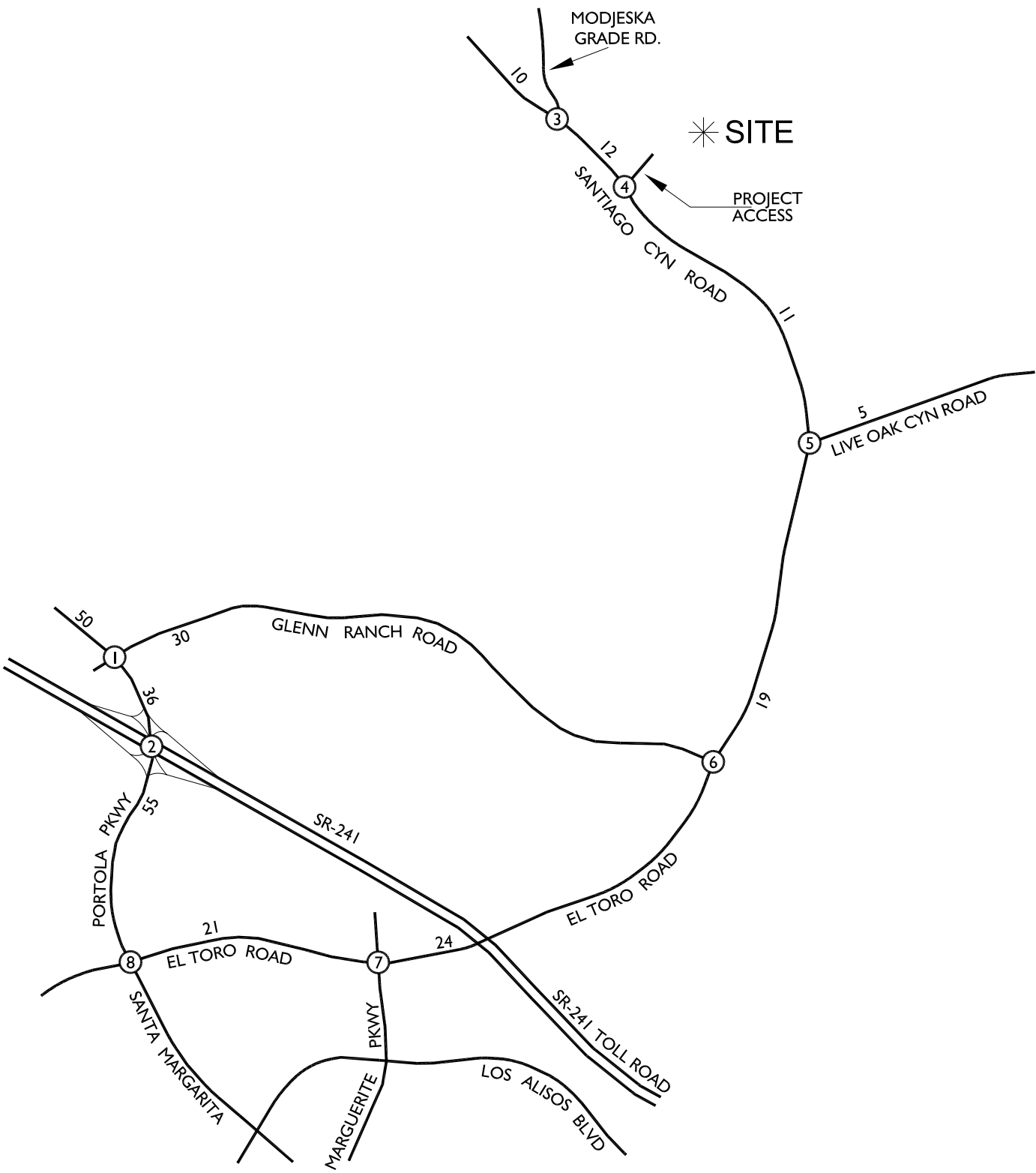
←

AM: 370
PM: 682

 = Peak Hour Directional Traffic



Buildout (Year 2035) Without Project
Peak Hour Intersection Volumes and Average Daily Traffic (ADT)



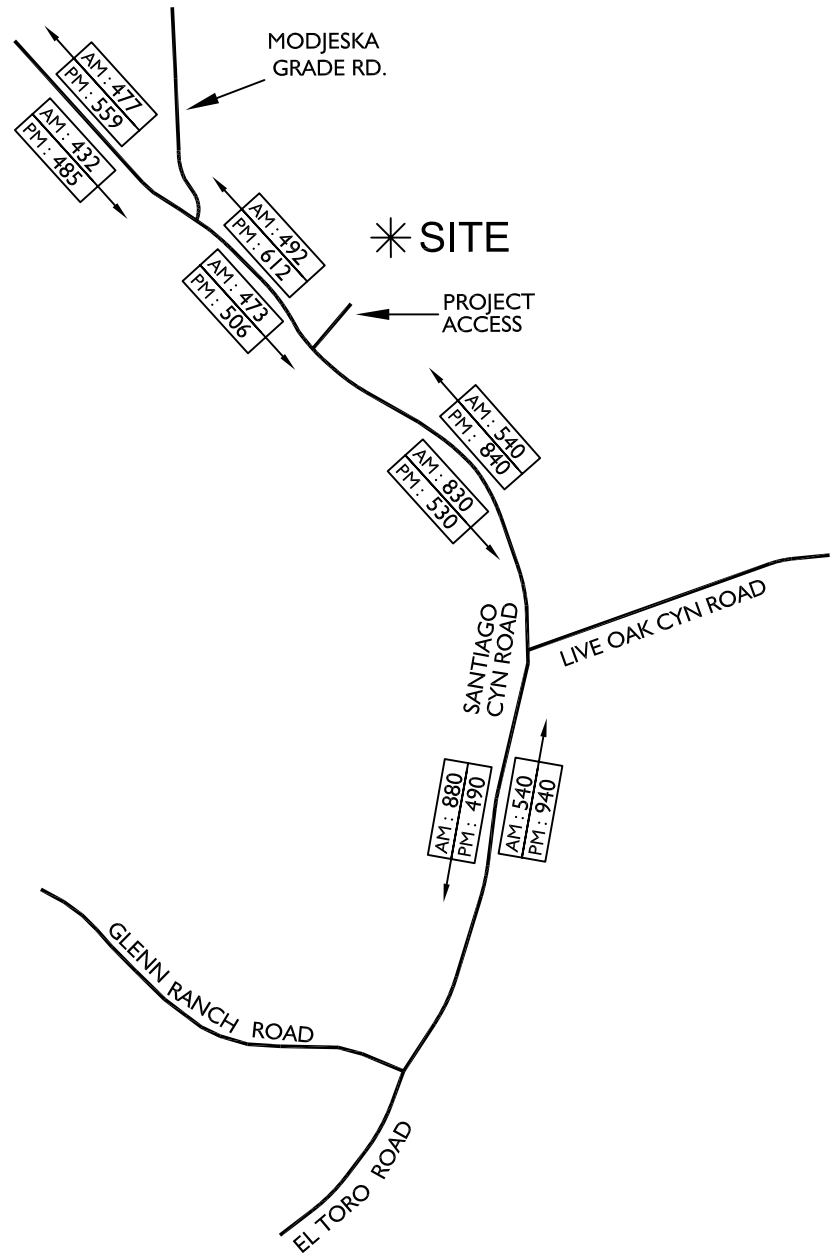
Legend:

- ① = Study Area Intersection
- 10/20 = AM/PM Peak Hour Volumes
- 10 = Average Daily Traffic (1,000s)

Note:
Buildout (Year 2035) traffic volumes and ADTs are from Austin-Foust Associates, Inc. Saddle Crest Traffic Forecast Data, except for the intersection of Santiago Canyon Road and Modjeska Grade Road. Traffic volumes for this intersection were calculated using a 2% growth rate per year based on existing traffic volumes counted by RK in May 2011.



Buildout Year Without Project Peak Hour Roadway Segment Volumes along Santiago Canyon Road



Legend:

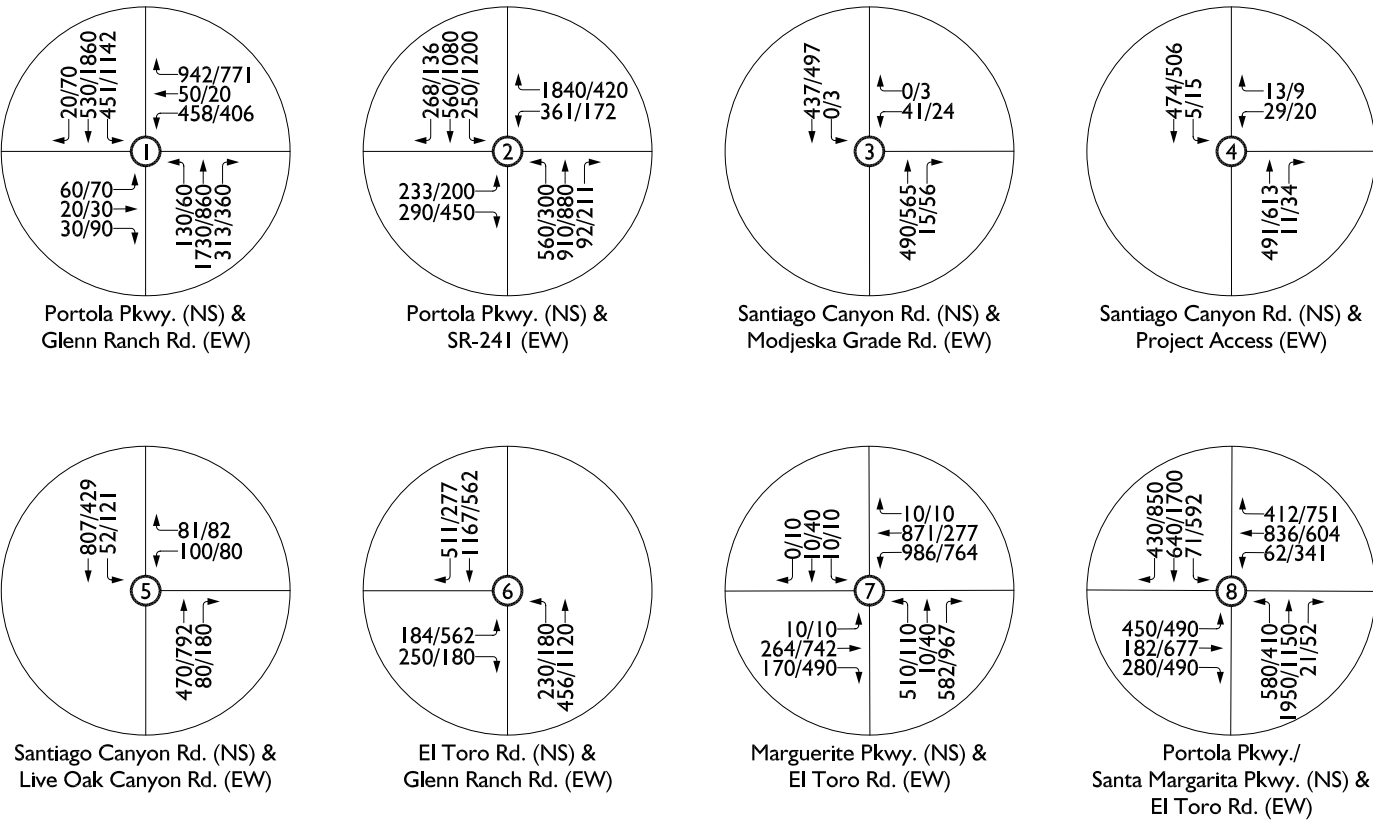
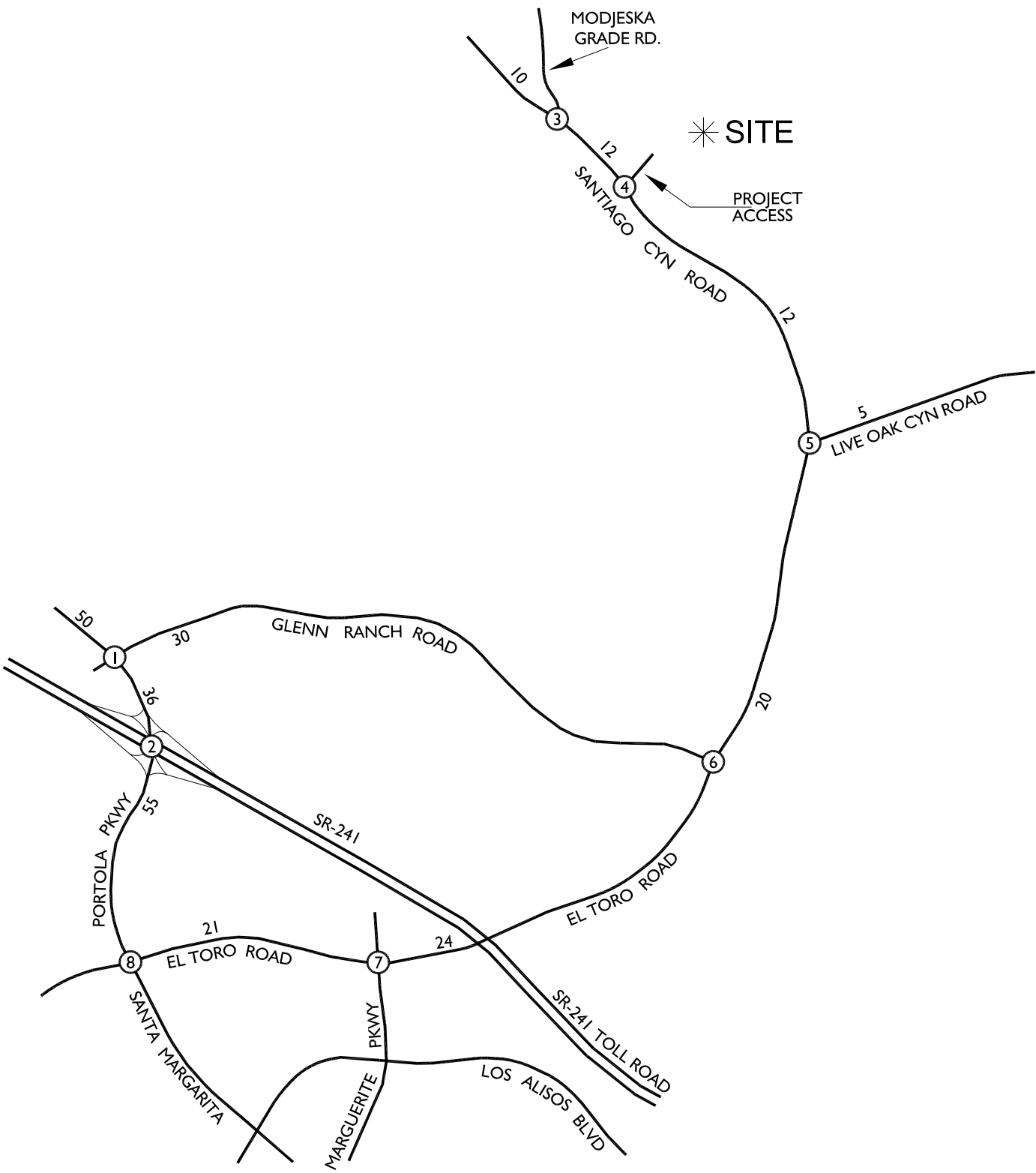
←

AM: 540
PM: 940

 = Peak Hour Directional Traffic



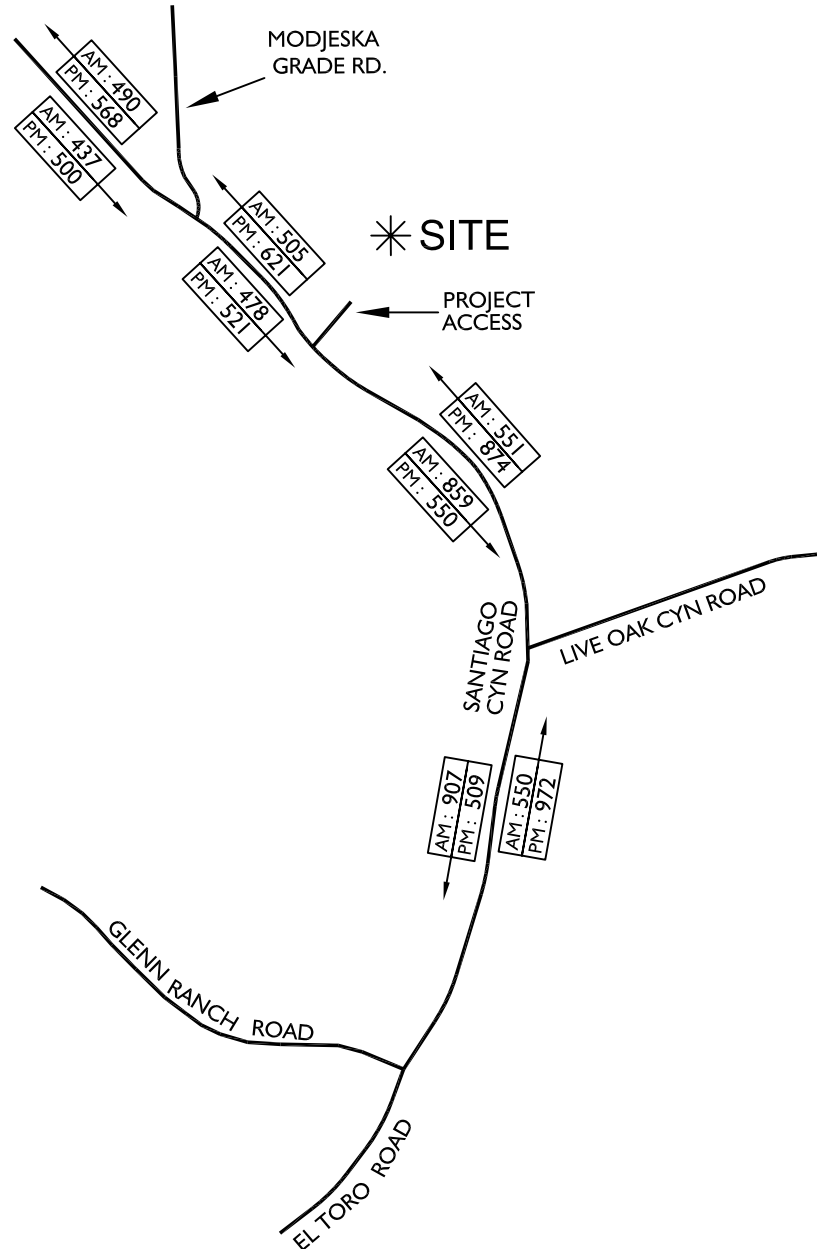
Buildout Year With Project
Peak Hour Intersection Volumes and Average Daily Traffic (ADT)



Legend:
① = Study Area Intersection
10/20 = AM/PM Peak Hour Volumes
10 = Average Daily Traffic (1,000s)



Buildout Year With Project Peak Hour Roadway Segment Volumes along Santiago Canyon Road



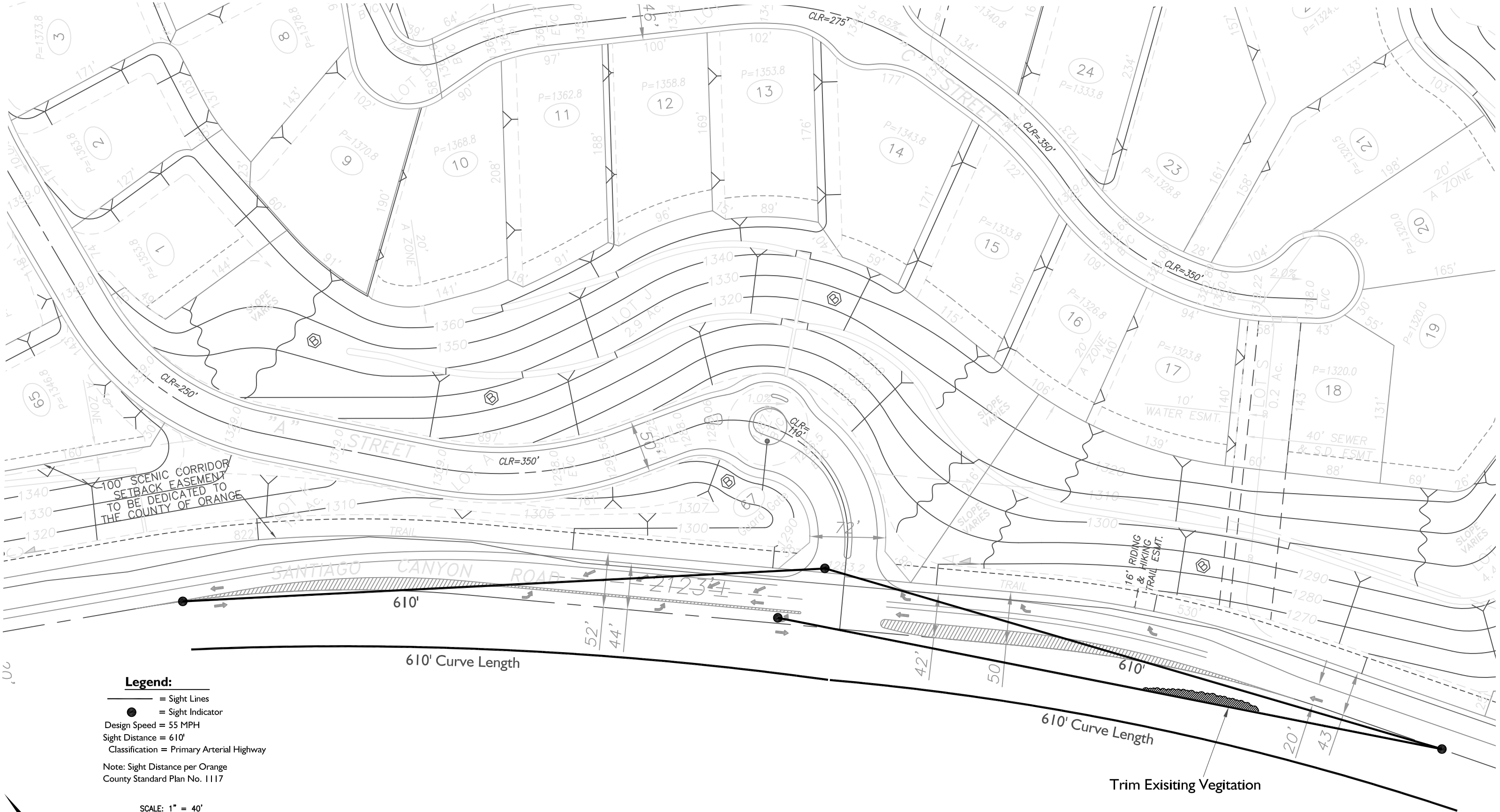
Legend:

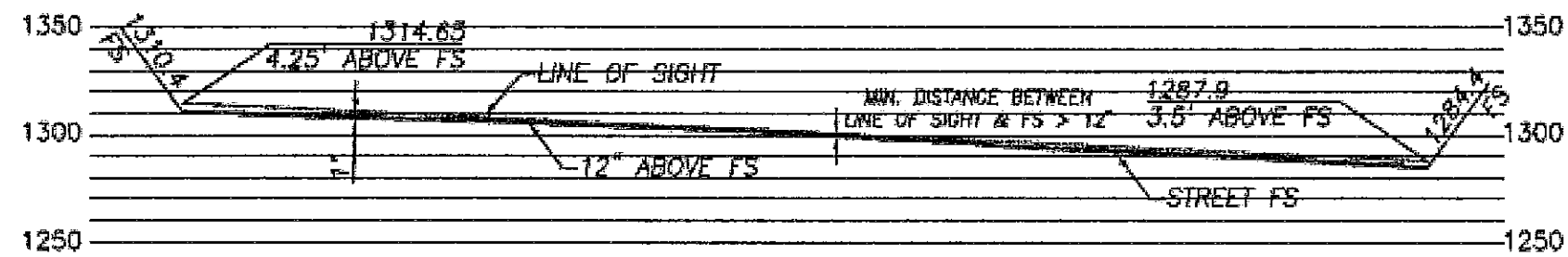
←

AM: 550
PM: 972

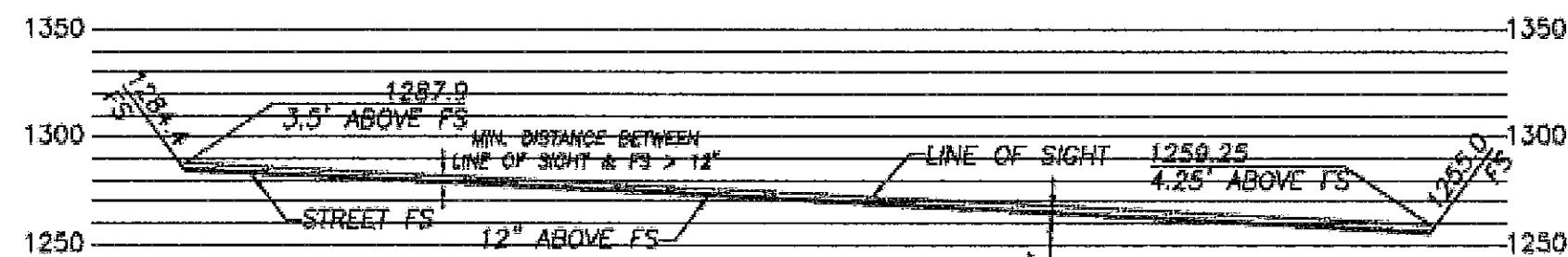
 = Peak Hour Directional Traffic



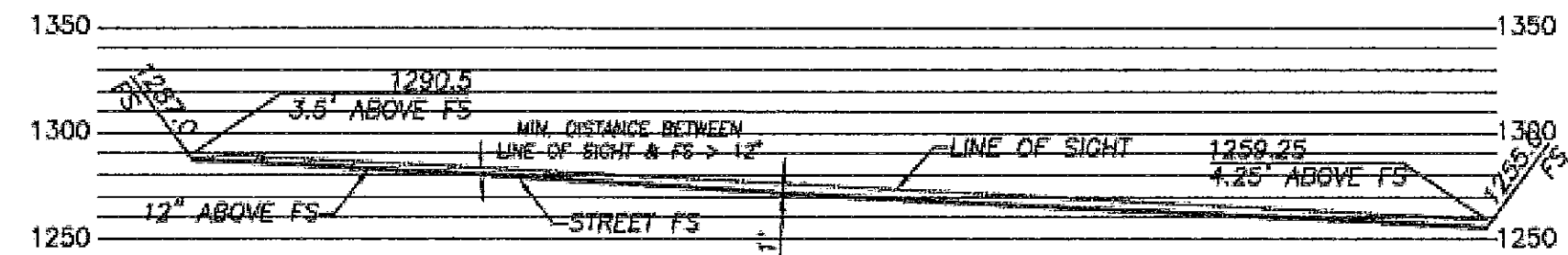




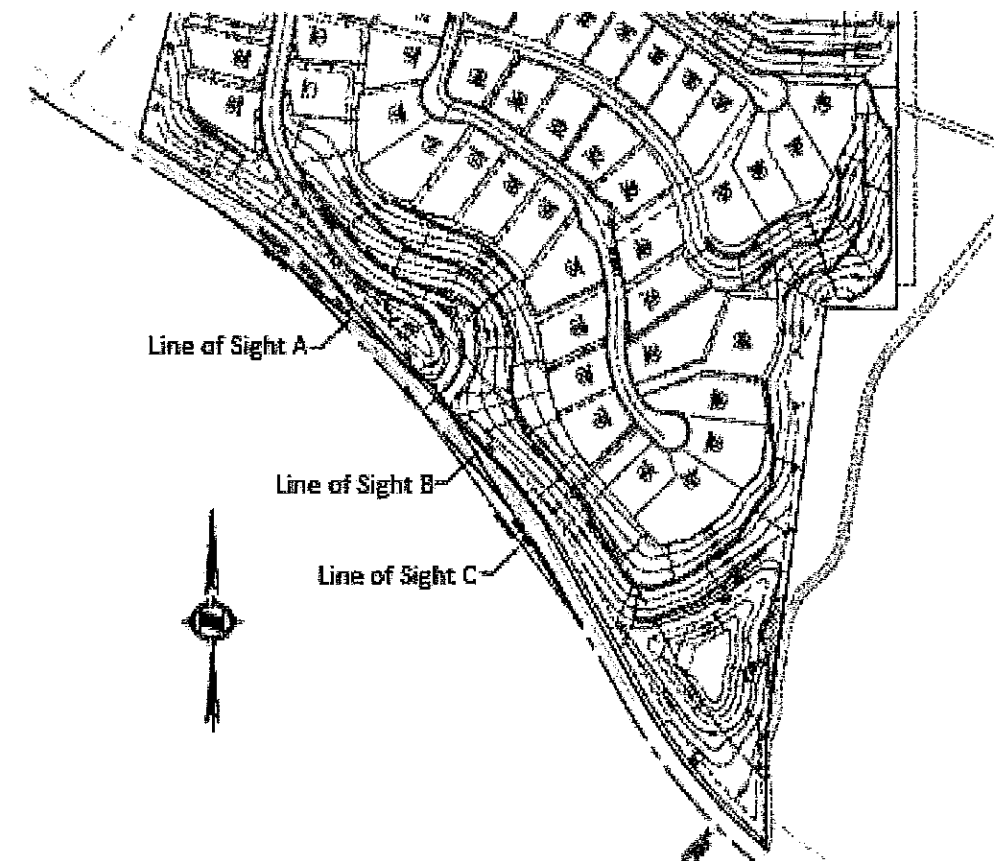
PROFILE A



PROFILE B



PROFILE C



Key Map

SOURCE: HUNSAKER & ASSOCIATES IRVINE, INC.

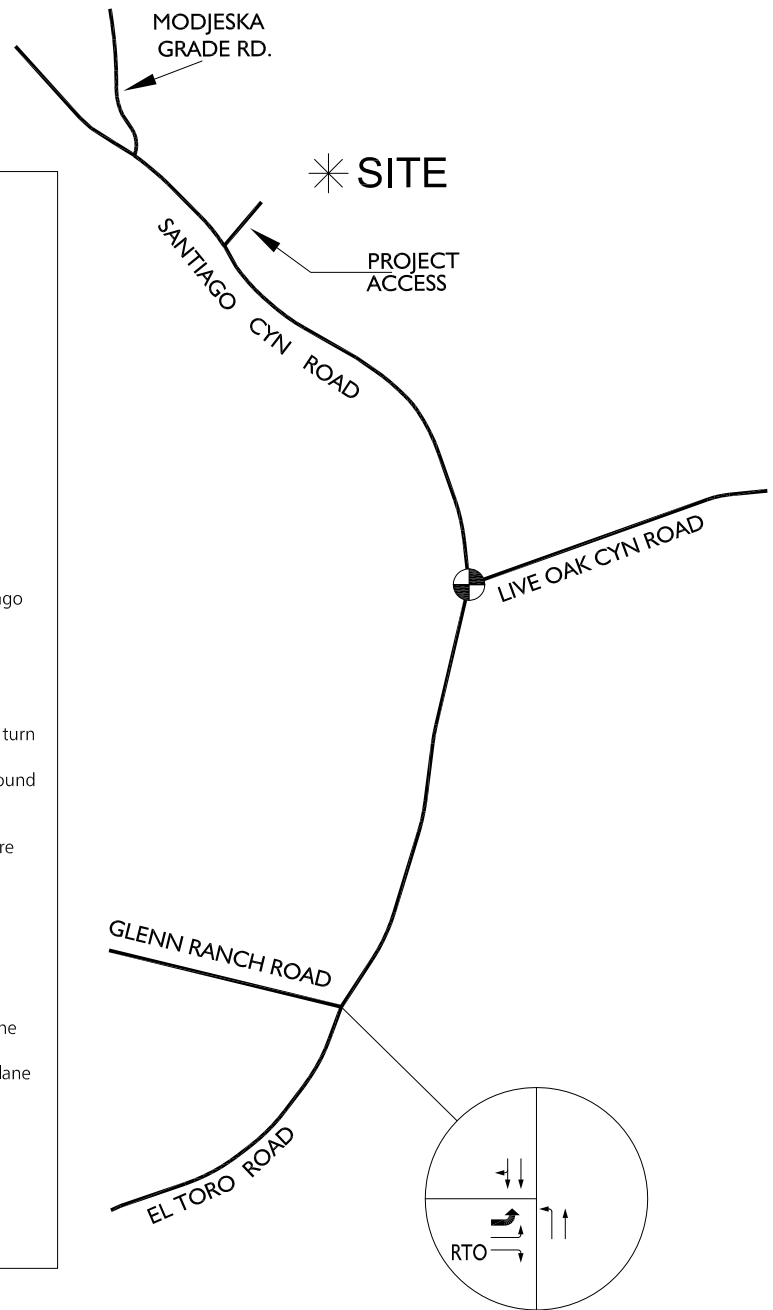
General Notes:

1. On-Site Recommendations

- I. Construct the on-site circulation system per the detailed site plan.
- II. Provide the following project access point on Santiago Canyon Road:
 - a. Project Access - full access.
- III. Install stop signs, stop bars and stop legends at Project Access.

2. Area-Wide Recommendations

- I. Complete any remaining street half-section improvements on Santiago Canyon Road, directly adjacent to the project boundaries.
 - i. Santiago Canyon Road (NS) at Project Access (EW):
 - i.a. Install northbound right turn pocket
 - i.b. Install southbound left turn pocket
 - i.c. Install westbound right turn lane and westbound left turn lane for project access.
 - i.d. Install stop sign, stop bar, and stop legend for westbound project access.
- II. As detailed in Table 11, the project should participate on a fair share bases in the installation of the following off-site improvements:
 - i. Santiago Canyon Road (NS) at Live Oak Canyon Road (EW):
 - ii.a. Install traffic signal and interconnect.
 - ii. Santiago Canyon Road/El Toro Road (NS) at Glenn Ranch Road (EW):
 - iii.a. Restripe to add one additional eastbound left turn Lane on Glenn Ranch Road
 - iii.b. Restripe to add one additional northbound receiving lane on Santiago Canyon Road
- III. Traffic signing/stripping should be implemented in conjunction with detailed construction plans for the project site.
- IV. The recommendations for Buildout (Year 2035) With Project are summarized in Section 8 of the report and in Table 11.



Legend:

- = Install Traffic Signal
- = Improvements



Tables

TABLE 1
Intersection Analysis For Existing Conditions

Intersection	Traffic Control ³	Intersection Approach Lane(s) ¹												Critical V/C Ratio or Delay (Sec.) ²		Level of Service	
		Northbound			Southbound			Eastbound			Westbound						
		L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
Portola Parkway (NS) at • Glenn Ranch Road (EW)	TS	2.0	3.0	1.0	2.0	3.0	1.0	1.0	1.5	0.5	2.0	2.0	1.0>>	0.550	0.560	A	A
• SR-241 Toll Road (EW)	TS	2.0	3.0	1.0>>	2.0	2.0	1.0>>	1.0	0.0	1.0>>	2.0	0.0	1.0>>	0.413	0.594	A	A
Santiago Canyon Road (NS) at • Modjeska Grade Road (EW)	CSS	0.0	1.0	1.0	0.0	0.5	0.5	0.0	0.0	0.0	0.5	0.0	0.5	14.3	14.4	B	B
• Project Access (EW)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
• Live Oak Canyon Road (EW)	CSS	0.0	0.5	0.5	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	1.0	16.1	18.9	C	C
Santiago Canyon Road / El Toro Road (NS) at • Glenn Ranch Road (EW)	TS	1.0	1.0	0.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.502	0.478	A	A
Marguerite Parkway / Saddleback Church (NS) at • El Toro Road (EW)	TS	1.5	1.5	1.0>	1.0	1.5	1.5	2.0	2.0	1.0	2.0	1.5	0.5	0.330	0.427	A	A
Portola Parkway / Santa Margarita Parkway (NS) at • El Toro Road (EW)	TS	2.0	3.5	0.5	2.0	3.0	1.0	1.0	3.0	1.0>>	1.0	3.0	1.0	0.639	0.605	B	B

¹ When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes. Where "1" is indicated for the through movement and "0"s are indicated for R/L movements, the R and/or L turns are shared with the through movement.

L = Left; T = Through; R = Right; > = Right Turn Overlap; >> = Free Right Turn; **Bold** = Improvement

² Analysis Software: Traffix, Version 8.0. Per the Intersection Capacity Utilization methodology, overall volume to capacity ratios and levels of service are shown for intersections controlled by traffic signals. Critical delay in seconds is shown per Highway Capacity Manual (HCM 2000) methodology to analyze stop controlled intersections and LOS is determined based on the worst individual movement or movements sharing a single lane.

³ TS = Traffic Signal
CSS = Cross Street Stop

TABLE 2
Trip Generation Rates¹

Land Use	Quantity	Units ²	Peak Hour						Daily
			AM			PM			
			In	Out	Total	In	Out	Total	
Single-Family Detached Housing	65	DU	0.24	0.65	0.89	0.76	0.44	1.20	12.00

¹ Source: The daily trip generation is based on the single family detached rate from the County of Orange Trip Generation Rate Summary (Daily Vehicle Trip Generation Rates, August 1982). The peak hour trip generation rates were taken from the Foothill/Trabuco Specific Plan Traffic Analysis (Austin-Foust Associates, Inc. July 1991).

² DU = Dwelling Units

TABLE 3
Trip Generation

Land Use	Quantity	Units ¹	Peak Hour						Daily
			AM			PM			
			In	Out	Total	In	Out	Total	
Single-Family Detached Housing	65	DU	16	42	58	49	29	78	780

¹ DU = Dwelling Units

TABLE 4
Intersection Analysis For Existing Plus Project Conditions

Intersection	Traffic Control ³	Intersection Approach Lane(s) ¹												Critical V/C Ratio or Delay (Sec.) ²		Level of Service	
		Northbound			Southbound			Eastbound			Westbound						
		L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
Portola Parkway (NS) at • Glenn Ranch Road (EW)	TS	2.0	3.0	1.0	2.0	3.0	1.0	1.0	1.5	0.5	2.0	2.0	1.0>>	0.555	0.562	A	A
• SR-241 Toll Road (EW)	TS	2.0	3.0	1.0>>	2.0	2.0	1.0>>	1.0	0.0	1.0>>	2.0	0.0	1.0>>	0.415	0.600	A	B
Santiago Canyon Road (NS) at • Modjeska Grade Road (EW)	CSS	0.0	1.0	1.0	0.0	0.5	0.5	0.0	0.0	0.0	0.5	0.0	0.5	14.6	14.7	B	B
• Project Access (EW)	CSS	0.0	1.0	<u>1.0</u>	<u>1.0</u>	1.0	0.0	0.0	0.0	0.0	<u>1.0</u>	0.0	<u>1.0</u>	14.0	15.6	B	B
• Live Oak Canyon Road (EW)	CSS	0.0	0.5	0.5	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	1.0	17.0	20.3	C	C
Santiago Canyon Road / El Toro Road (NS) at • Glenn Ranch Road (EW)	TS	1.0	1.0	0.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.510	0.497	A	A
Marguerite Parkway / Saddleback Church (NS) at • El Toro Road (EW)	TS	1.5	1.5	1.0>	1.0	1.5	1.5	2.0	2.0	1.0	2.0	1.5	0.5	0.332	0.431	A	A
Portola Parkway / Santa Margarita Parkway (NS) at • El Toro Road (EW)	TS	2.0	3.5	0.5	2.0	3.0	1.0	1.0	3.0	1.0>>	1.0	3.0	1.0	0.640	0.606	B	B

¹ When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes. Where "1" is indicated for the through movement and "0"s are indicated for R/L movements, the R and/or L turns are shared with the through movement.

L = Left; T = Through; R = Right; > = Right Turn Overlap; >> = Free Right Turn; **Improvement** = Improvement

² Analysis Software: Traffix, Version 8.0. Per the Intersection Capacity Utilization methodology, overall volume to capacity ratios and levels of service are shown for intersections controlled by traffic signals. Critical delay in seconds is shown per Highway Capacity Manual (HCM 2000) methodology to analyze stop controlled intersections and LOS is determined based on the worst individual movement or movements sharing a single lane.

³ TS = Traffic Signal
CSS = Cross Street Stop

TABLE 5
Intersection Analysis For Interim Year (2015) Without Project Conditions

Intersection	Traffic Control ³	Intersection Approach Lane(s) ¹												Critical V/C Ratio or Delay (Sec.) ²		Level of Service	
		Northbound			Southbound			Eastbound			Westbound			AM	PM	AM	PM
		L	T	R	L	T	R	L	T	R	L	T	R				
Portola Parkway (NS) at • Glenn Ranch Road (EW)	TS	2.0	3.0	1.0	2.0	3.0	1.0	1.0	1.5	0.5	2.0	2.0	1.0>>	0.609	0.646	B	B
• SR-241 Toll Road (EW)	TS	2.0	3.0	1.0>>	2.0	2.0	1.0>>	1.0	0.0	1.0>>	2.0	0.0	1.0>>	0.474	0.595	A	A
Santiago Canyon Road (NS) at • Modjeska Grade Road (EW)	CSS	0.0	1.0	1.0	0.0	0.5	0.5	0.0	0.0	0.0	0.5	0.0	0.5	15.1	14.6	C	B
• Project Access (EW)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
• Live Oak Canyon Road (EW)	CSS	0.0	0.5	0.5	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	1.0	26.0	28.7	D	D
Santiago Canyon Road / El Toro Road (NS) at • Glenn Ranch Road (EW)	TS	1.0	1.0	0.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.633	0.709	B	C
Marguerite Parkway / Saddleback Church (NS) at • El Toro Road (EW)	TS	1.5	1.5	1.0>	1.0	1.5	1.5	2.0	2.0	1.0	2.0	1.5	0.5	0.449	0.562	A	A
Portola Parkway / Santa Margarita Parkway (NS) at • El Toro Road (EW)	TS	2.0	3.5	0.5	2.0	3.0	1.0	1.0	3.0	1.0>>	1.0	3.0	1.0	0.691	1.039	B	F

¹ When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes. Where "1" is indicated for the through movement and "0"s are indicated for R/L movements, the R and/or L turns are shared with the through movement.

L = Left; T = Through; R = Right; > = Right Turn Overlap; >> = Free Right Turn; **Improvement** = Improvement

² Analysis Software: Traffix, Version 8.0. Per the Intersection Capacity Utilization methodology, overall volume to capacity ratios and levels of service are shown for intersections controlled by traffic signals. Critical delay in seconds is shown per Highway Capacity Manual (HCM 2000) methodology to analyze stop controlled intersections and LOS is determined based on the worst individual movement or movements sharing a single lane.

³ TS = Traffic Signal
CSS = Cross Street Stop

TABLE 6
Intersection Analysis For Interim Year (2015) With Project Conditions

Intersection	Traffic Control ³	Intersection Approach Lane(s) ¹												Critical V/C Ratio or Delay (Sec.) ²		Level of Service	
		Northbound			Southbound			Eastbound			Westbound						
		L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
Portola Parkway (NS) at • Glenn Ranch Road (EW)	TS	2.0	3.0	1.0	2.0	3.0	1.0	1.0	1.5	0.5	2.0	2.0	1.0>>	0.611	0.648	B	B
• SR-241 Toll Road (EW)	TS	2.0	3.0	1.0>>	2.0	2.0	1.0>>	1.0	0.0	1.0>>	2.0	0.0	1.0>>	0.475	0.601	A	B
Santiago Canyon Road (NS) at • Modjeska Grade Road (EW)	CSS	0.0	1.0	1.0	0.0	0.5	0.5	0.0	0.0	0.0	0.5	0.0	0.5	15.4	14.9	C	B
• Project Access (EW)	CSS	0.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	1.0	14.7	16.6	B	C
• Live Oak Canyon Road (EW)	CSS	0.0	0.5	0.5	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	1.0	28.3	31.6	D	D
Santiago Canyon Road / El Toro Road (NS) at • Glenn Ranch Road (EW)	TS	1.0	1.0	0.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.641	0.728	B	C
Marguerite Parkway / Saddleback Church (NS) at • El Toro Road (EW)	TS	1.5	1.5	1.0>	1.0	1.5	1.5	2.0	2.0	1.0	2.0	1.5	0.5	0.451	0.565	A	A
Portola Parkway / Santa Margarita Parkway (NS) at • El Toro Road (EW) ⁴	TS	2.0	3.5	0.5	2.0	3.0	1.0	1.0	3.0	1.0>>	1.0	3.0	1.0	0.692	1.040	B	F

¹ When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes. Where "1" is indicated for the through movement and "0"s are indicated for R/L movements, the R and/or L turns are shared with the through movement.

L = Left; T = Through; R = Right; > = Right Turn Overlap; >> = Free Right Turn; **Bold** = Improvement

² Analysis Software: Traffix, Version 8.0. Per the Intersection Capacity Utilization methodology, overall volume to capacity ratios and levels of service are shown for intersections controlled by traffic signals. Critical delay in seconds is shown per Highway Capacity Manual (HCM 2000) methodology to analyze stop controlled intersections and LOS is determined based on the worst individual movement or movements sharing a single lane.

³ TS = Traffic Signal
CSS = Cross Street Stop

⁴ The project does not have a significant impact at this intersection.

TABLE 7
Intersection Analysis For Buildout (Year 2035) Without Project Conditions

Intersection	Traffic Control ³	Intersection Approach Lane(s) ¹												Critical V/C Ratio or Delay (Sec.) ²		Level of Service	
		Northbound			Southbound			Eastbound			Westbound			AM	PM	AM	PM
		L	T	R	L	T	R	L	T	R	L	T	R				
Portola Parkway (NS) at																	
• Glenn Ranch Road (EW)	TS	2.0	3.0	1.0	2.0	3.0	1.0	1.0	1.5	0.5	2.0	2.0	1.0>>	0.672	0.725	B	C
• SR-241 Toll Road (EW)	TS	2.0	3.0	1.0>>	2.0	2.0	1.0>>	1.0	0.0	1.0>>	2.0	0.0	1.0>>	0.515	0.687	A	B
Santiago Canyon Road (NS) at																	
• Modjeska Grade Road (EW)	CSS	0.0	1.0	1.0	0.0	0.5	0.5	0.0	0.0	0.0	0.5	0.0	0.5	12.1	19.7	B	C
• Project Access (EW)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
• Live Oak Canyon Road (EW)	CSS	0.0	0.5	0.5	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	1.0	63.1	82.5	F	F
- With Improvements ⁴	TS	0.0	0.5	0.5	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	1.0	0.568	0.721	A	C
Santiago Canyon Road / El Toro Road (NS) at																	
• Glenn Ranch Road (EW)	TS	1.0	1.0	0.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.796	1.021	C	F
- With Improvements ⁴	TS	1.0	1.0	0.0	0.0	1.0	1.0	2.0	0.0	1.0	0.0	0.0	0.0	0.796	0.859	C	D
Marguerite Parkway / Saddleback Church (NS) at																	
• El Toro Road (EW)	TS	1.5	1.5	1.0>	1.0	1.5	1.5	2.0	2.0	1.0	2.0	1.5	0.5	0.571	0.787	A	C
Portola Parkway / Santa Margarita Parkway (NS) at																	
• El Toro Road (EW)	TS	2.0	3.5	0.5	2.0	3.0	1.0	1.0	3.0	1.0>>	1.0	3.0	1.0	0.905	1.259	E	F

¹ When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes. Where "1" is indicated for the through movement and "0"s are indicated for R/L movements, the R and/or L turns are shared with the through movement.

L = Left; T = Through; R = Right; > = Right Turn Overlap; >> = Free Right Turn; **Bold** = Improvement

² Analysis Software: Traffix, Version 8.0. Per the Intersection Capacity Utilization methodology, overall volume to capacity ratios and levels of service are shown for intersections controlled by traffic signals. Critical delay in seconds is shown per Highway Capacity Manual (HCM 2000) methodology to analyze stop controlled intersections and LOS is determined based on the worst individual movement or movements sharing a single lane.

³ TS = Traffic Signal
CSS = Cross Street Stop

⁴ Intersection improvements are only shown to compare with Table 8 for condition with the project and where the project would have a significant impact.

TABLE 8
Intersection Analysis For Buildout (Year 2035) With Project Conditions

Intersection	Traffic Control ³	Intersection Approach Lane(s) ¹												Critical V/C Ratio or Delay (Sec.) ²		Level of Service	
		Northbound			Southbound			Eastbound			Westbound						
		L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
Portola Parkway (NS) at • Glenn Ranch Road (EW)	TS	2.0	3.0	1.0	2.0	3.0	1.0	1.0	1.5	0.5	2.0	2.0	1.0>>	0.674	0.727	B	C
• SR-241 Toll Road (EW)	TS	2.0	3.0	1.0>>	2.0	2.0	1.0>>	1.0	0.0	1.0>>	2.0	0.0	1.0>>	0.516	0.693	A	B
Santiago Canyon Road (NS) at • Modjeska Grade Road (EW)	CSS	0.0	1.0	1.0	0.0	0.5	0.5	0.0	0.0	0.0	0.5	0.0	0.5	15.0	20.3	B	C
• Project Access (EW)	N/A	0.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	1.0	19.3	23.1	C	C
• Live Oak Canyon Road (EW)	CSS	0.0	0.5	0.5	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	1.0	71.2	97.2	F	F
- With Improvements	TS	0.0	0.5	0.5	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	1.0	0.584	0.740	A	C
Santiago Canyon Road / El Toro Road (NS) at • Glenn Ranch Road (EW)	TS	1.0	1.0	0.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.804	1.039	D	F
- With Improvements	TS	1.0	1.0	0.0	0.0	1.0	1.0	2.0	0.0	1.0	0.0	0.0	0.0	0.804	0.874	D	D
Marguerite Parkway / Saddleback Church (NS) at • El Toro Road (EW)	TS	1.5	1.5	1.0>	1.0	1.5	1.5	2.0	2.0	1.0	2.0	1.5	0.5	0.574	0.790	B	C
Portola Parkway / Santa Margarita Parkway (NS) at • El Toro Road (EW) ⁴	TS	2.0	3.5	0.5	2.0	3.0	1.0	1.0	3.0	1.0>>	1.0	3.0	1.0	0.906	1.259	E	F

¹ When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes. Where "1" is indicated for the through movement and "0"s are indicated for R/L movements, the R and/or L turns are shared with the through movement.

L = Left; T = Through; R = Right; > = Right Turn Overlap; >> = Free Right Turn; **Bold** = Improvement

² Analysis Software: Traffix, Version 8.0. Per the Intersection Capacity Utilization methodology, overall volume to capacity ratios and levels of service are shown for intersections controlled by traffic signals. Critical delay in seconds is shown per Highway Capacity Manual (HCM 2000) methodology to analyze stop controlled intersections and LOS is determined based on the worst individual movement or movements sharing a single lane.

³ TS = Traffic Signal
CSS = Cross Street Stop

⁴ The project does not have a significant impact at this intersection, so no improvement is necessary.

TABLE 9
Summary Intersection Analysis²

Intersection	Intersection Analysis For Existing Conditions				Intersection Analysis For Existing Plus Project Conditions				Change in Critical V/C Ratio		Significant Impact	
	ICU Critical V/C Ratio ¹		Level of Service		ICU Critical V/C Ratio ¹		Level of Service					
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Portola Parkway (NS) at												
• Glenn Ranch Road (EW)	0.550	0.560	A	A	0.555	0.562	A	A	0.005	0.002	NO	NO
• SR-241 Toll Road (EW)	0.413	0.594	A	A	0.415	0.600	A	B	0.002	0.006	NO	NO
Santiago Canyon Road (NS) at												
• Modjeska Grade Road (EW)	14.3	14.4	B	B	14.6	14.7	B	B	N/A	N/A	N/A	N/A
• Project Access (EW)	N/A	N/A	N/A	N/A	14.0	15.6	B	B	N/A	N/A	N/A	N/A
• Live Oak Canyon Road (EW)	16.1	18.9	C	C	17.0	20.3	C	C	N/A	N/A	N/A	N/A
Santiago Canyon Road / El Toro Road (NS) at												
• Glenn Ranch Road (EW)	0.502	0.478	A	A	0.510	0.497	A	A	0.008	0.019	NO	NO
Marguerite Parkway / Saddleback Church (NS) at												
• El Toro Road (EW)	0.330	0.427	A	A	0.332	0.431	A	A	0.002	0.004	NO	NO
Portola Parkway / Santa Margarita Parkway (NS) at												
• El Toro Road (EW)	0.639	0.605	B	B	0.640	0.606	B	B	0.001	0.001	NO	NO

Intersection	Intersection Analysis For Interim Year (2015) Without Project Conditions				Intersection Analysis For Interim Year (2015) With Project Conditions				Change in Critical V/C Ratio		Significant Impact	
	ICU Critical V/C Ratio ¹		Level of Service		ICU Critical V/C Ratio ¹		Level of Service					
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Portola Parkway (NS) at • Glenn Ranch Road (EW)	0.609	0.646	B	B	0.611	0.648	B	B	0.002	0.002	NO	NO
• SR-241 Toll Road (EW)	0.474	0.595	A	A	0.475	0.601	A	B	0.001	0.006	NO	NO
Santiago Canyon Road (NS) at • Modjeska Grade Road (EW)	15.1	14.6	C	B	15.4	14.9	C	B	N/A	N/A	N/A	N/A
• Project Access (EW)	N/A	N/A	N/A	N/A	14.7	16.6	B	C	N/A	N/A	N/A	N/A
• Live Oak Canyon Road (EW)	26.0	28.7	D	D	28.3	31.6	D	D	N/A	N/A	N/A	N/A
Santiago Canyon Road / El Toro Road (NS) at • Glenn Ranch Road (EW)	0.633	0.709	B	C	0.641	0.728	B	C	0.008	0.019	NO	NO
Marguerite Parkway / Saddleback Church (NS) at • El Toro Road (EW)	0.449	0.562	A	A	0.451	0.565	A	A	0.002	0.003	NO	NO
Portola Parkway / Santa Margarita Parkway (NS) at • El Toro Road (EW)	0.691	1.039	B	F	0.692	1.04	B	F	0.001	0.001	NO	NO

Intersection	Intersection Analysis for Buildout Without Project Conditions				Intersection Analysis For Buildout With Project Conditions				Change in Critical V/C Ratio		Significant Impact	
	ICU Critical V/C Ratio ¹		Level of Service		ICU Critical V/C Ratio ¹		Level of Service					
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Portola Parkway (NS) at												
• Glenn Ranch Road (EW)	0.672	0.725	B	C	0.674	0.727	B	C	0.002	0.002	NO	NO
• SR-241 Toll Road (EW)	0.515	0.687	A	B	0.516	0.693	A	B	0.001	0.006	NO	NO
Santiago Canyon Road (NS) at												
• Modjeska Grade Road (EW)	12.1	19.7	B	C	15.0	20.3	B	C	N/A	N/A	N/A	N/A
• Project Access (EW)	N/A	N/A	N/A	N/A	19.3	23.1	C	C	N/A	N/A	N/A	N/A
• Live Oak Canyon Road (EW) ³	63.1	82.5	F	F	71.2	97.2	F	F	0.016	0.019	<u>YES</u>	<u>YES</u>
• - With Improvements	0.568	0.721	A	C	0.584	0.740	A	C	0.016	0.019	NO	NO
Santiago Canyon Road / El Toro Road (NS) at												
• Glenn Ranch Road (EW)	0.796	1.021	C	F	0.804	1.039	D	F	0.008	0.018	NO	<u>YES</u>
• - With Improvements	0.796	0.859	C	D	0.804	0.874	D	D	0.008	0.015	NO	NO
Marguerite Parkway / Saddleback Church (NS) at												
• El Toro Road (EW)	0.571	0.787	A	C	0.574	0.790	B	C	0.003	0.003	NO	NO
Portola Parkway / Santa Margarita Parkway (NS) at												
• El Toro Road (EW)	0.905	1.259	E	F	0.906	1.259	E	F	0.001	0.000	NO	NO

¹ Analysis Software: Traffix, Version 8.0. Per the Intersection Capacity Utilization methodology, overall volume to capacity ratios and levels of service are shown for intersections controlled by traffic signals. Critical delay in seconds is shown per Highway Capacity Manual (HCM 2000) methodology to analyze stop controlled intersections, and LOS is determined based on the worst individual movement or movements sharing a single lane.

² Significant Impact = Yes, if:
 • LOS increases from D to E or F
 • LOS is already E or F and the change in V/C ratio (ICU) is greater than or equal to 0.010

³ For the Intersection of Santiago Canyon Road and Live Oak Canyon Road, significant impact was determined by change in V/C ratio per ICU methodology for signalized intersections.

TABLE 10
Santiago Canyon Road Segment Analysis ¹

Santiago Canyon Road (Link Segment)	Existing Conditions								Existing Plus Project Conditions							
	AM				PM				AM				PM			
	Volume	Capacity	V/C Ratio	LOS	Volume	Capacity	V/C Ratio	LOS	Volume	Capacity	V/C Ratio	LOS	Volume	Capacity	V/C Ratio	LOS
North of Modjeska Grade Road																
• Northbound	322	1700	0.19	A	378	1700	0.22	A	335	1700	0.20	A	387	1700	0.23	A
• Southbound	292	1700	0.17	A	328	1700	0.19	A	297	1700	0.17	A	343	1700	0.20	A
North of Project Access																
• Northbound	332	1700	0.20	A	414	1700	0.24	A	345	1700	0.20	A	423	1700	0.25	A
• Southbound	320	1700	0.19	A	342	1700	0.20	A	325	1700	0.19	A	357	1700	0.21	A
North of Live Oak Canyon Road																
• Northbound	268	1700	0.16	A	438	1700	0.26	A	279	1700	0.16	A	472	1700	0.28	A
• Southbound	357	1700	0.21	A	293	1700	0.17	A	386	1700	0.23	A	313	1700	0.18	A
North of Glenn Ranch road																
• Northbound	257	1700	0.15	A	501	1700	0.29	A	267	1700	0.16	A	533	1700	0.31	A
• Southbound	388	1700	0.23	A	272	1700	0.16	A	415	1700	0.24	A	291	1700	0.17	A

Santiago Canyon Road (Link Segment)	Interim Year (2015) Without Project Conditions								Interim (Year 2015) With Project Conditions							
	AM				PM				AM				PM			
	Volume	Capacity	V/C Ratio	LOS	Volume	Capacity	V/C Ratio	LOS	Volume	Capacity	V/C Ratio	LOS	Volume	Capacity	V/C Ratio	LOS
North of Modjeska Grade Road																
• Northbound	348	1700	0.20	A	408	1700	0.24	A	361	1700	0.2	A	417	1700	0.25	A
• Southbound	315	1700	0.19	A	354	1700	0.21	A	320	1700	0.2	A	369	1700	0.22	A
North of Project Access																
• Northbound	359	1700	0.21	A	447	1700	0.26	A	372	1700	0.2	A	456	1700	0.27	A
• Southbound	345	1700	0.20	A	369	1700	0.22	A	350	1700	0.2	A	384	1700	0.23	A
North of Live Oak Canyon Road																
• Northbound	370	1700	0.22	A	570	1700	0.34	A	381	1700	0.2	A	604	1700	0.36	A
• Southbound	490	1700	0.29	A	400	1700	0.24	A	519	1700	0.3	A	420	1700	0.25	A
North of Glenn Ranch road																
• Northbound	360	1700	0.21	A	650	1700	0.38	A	370	1700	0.2176	A	682	1700	0.40	A
• Southbound	540	1700	0.32	A	390	1700	0.23	A	567	1700	0.3335	A	409	1700	0.24	A

Santiago Canyon Road (Link Segment)	Buildout Year Without Project Conditions								Buildout Year With Project Conditions							
	AM				PM				AM				PM			
	Volume	Capacity	V/C Ratio	LOS	Volume	Capacity	V/C Ratio	LOS	Volume	Capacity	V/C Ratio	LOS	Volume	Capacity	V/C Ratio	LOS
North of Modjeska Grade Road																
• Northbound	477	1700	0.28	A	559	1700	0.33	A	490	1700	0.29	A	568	1700	0.33	A
• Southbound	432	1700	0.25	A	485	1700	0.29	A	437	1700	0.26	A	500	1700	0.29	A
North of Project Access																
• Northbound	492	1700	0.29	A	612	1700	0.36	A	505	1700	0.30	A	621	1700	0.37	A
• Southbound	473	1700	0.28	A	506	1700	0.30	A	478	1700	0.28	A	521	1700	0.31	A
North of Live Oak Canyon Road																
• Northbound	540	1700	0.32	A	840	1700	0.49	A	551	1700	0.32	A	874	1700	0.51	A
• Southbound	830	1700	0.49	A	530	1700	0.31	A	859	1700	0.51	A	550	1700	0.32	A
North of Glenn Ranch road																
• Northbound	540	1700	0.32	A	940	1700	0.55	A	550	1700	0.32	A	972	1700	0.57	A
• Southbound	880	1700	0.52	A	490	1700	0.29	A	907	1700	0.53	A	509	1700	0.30	A

¹ See section 2 for detailed description of roadway segment analysis

TABLE 11
Required Intersection Improvements¹

Intersection	Interim (Year 2015) With Project Conditions	Buildout (Year 2035) With Project Conditions
Santiago Canyon Road (NS) at: • Project Access (EW)	NB: Install one (1) right turn pocket SB: Install one (1) left turn pocket WB: Install one (1) left turn lane and one (1) right turn lane	- -
• Live Oak Canyon Road (EW)	- -	Install Traffic Signal and Interconnect
Santiago Canyon Road/El Toro Road (NS) at: • Glenn Ranch Road (EW)	- -	EB: Restripe to add one (1) additional left turn lane NB: Restripe to provide one (1) additional receiving lane

¹ Project is responsible for the Interim (Year 2015) and Buildout (Year 2035) improvements, unless completed by others.

TABLE 12
Project Fair-Share Intersection Contribution¹

Intersection	Existing Conditions		Buildout (Year 2035) With Project Conditions		Growth in Traffic		Project Traffic		Project % of Buildout (Year 2035) With Project Conditions	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Santiago Cyn. Rd/El Toro Rd (NS) at:										
• Glenn Ranch Rd (EW)	1,503	1,472	2,798	2,881	1,295	1,409	38	51	2.93%	3.62%
• Live Oak Cyn. Rd (EW)	752	916	1,590	1,684	838	768	40	54	4.77%	7.03%

PROJECT "FAIR SHARE" COST			
Intersection	Project % of Buildout (Year 2035) With Project Conditions ²	Cost Estimate for Improvements ³	Project "Fair Share" Cost
Santiago Cyn. Rd/El Toro Rd (NS) at:			
• Glenn Ranch Rd (EW)	3.62%	\$5,413	\$196
• Live Oak Cyn. Rd (EW)	7.03%	\$138,475	\$9,737

¹ Only those intersections where the project contributes a significant impact, as defined in section 2 of this report, are listed.

² The higher amount of AM/PM peak hour project contribution is shown as "Fair Share" percentage.

³ See Appendix M for detailed breakdown of cost estimate.

Appendices

Appendix A

Traffic Count Worksheets

Peak Hour Turning Movement Counts

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA11_1071_003

Day: TUESDAY

City: City of Silverado

Date: 5/24/2011

NS/EW Streets:		AM											
		Portola Pkwy			Portola Pkwy			Glenn Ranch Rd			Glenn Ranch Rd		
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
LANES:	NL 2	NT 3	NR 1	SL 2	ST 3	SR 1	EL 1	ET 2	ER 0	WL 2	WT 2	WR 1	TOTAL
7:00 AM	17	268	65	51	72	14	15	3	19	62	17	118	721
7:15 AM	25	269	76	65	114	6	18	2	24	69	22	135	825
7:30 AM	21	281	71	80	195	9	25	2	11	74	7	169	945
7:45 AM	40	435	92	85	197	17	16	5	13	96	10	192	1198
8:00 AM	43	441	92	93	112	10	22	3	8	80	17	161	1082
8:15 AM	35	323	64	66	105	22	17	10	6	63	13	114	838
8:30 AM	45	313	65	68	130	22	15	3	7	28	12	126	834
8:45 AM	31	255	60	57	86	21	15	9	4	45	9	113	705
TOTAL VOLUMES :	NL 257	NT 2585	NR 585	SL 565	ST 1011	SR 121	EL 143	ET 37	ER 92	WL 517	WT 107	WR 1128	TOTAL 7148
APPROACH %'s :	7.50%	75.43%	17.07%	33.29%	59.58%	7.13%	52.57%	13.60%	33.82%	29.51%	6.11%	64.38%	

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	139	1480	319	374	609	58	80	20	38	313	47	636	4063
PEAK HR FACTOR :	0.841			0.829			0.908			0.836			0.848

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA11_1071_003

Day: TUESDAY

City: City of Silverado

Date: 5/24/2011

NS/EW Streets:		PM											
		Portola Pkwy			Portola Pkwy			Glenn Ranch Rd			Glenn Ranch Rd		
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
LANES:	NL 2	NT 3	NR 1	SL 2	ST 3	SR 1	EL 1	ET 2	ER 0	WL 2	WT 2	WR 1	TOTAL
4:00 PM	11	207	35	159	317	21	13	9	18	67	8	114	979
4:15 PM	12	193	35	127	279	15	20	5	12	53	4	99	854
4:30 PM	19	193	26	145	329	26	20	12	14	82	4	104	974
4:45 PM	12	217	39	170	330	10	13	7	22	51	4	95	970
5:00 PM	14	153	51	144	426	22	29	7	29	97	5	117	1094
5:15 PM	10	222	68	184	439	23	24	9	22	89	10	135	1235
5:30 PM	14	224	45	169	420	19	17	7	10	82	2	107	1116
5:45 PM	12	253	45	174	352	12	16	5	19	67	10	112	1077
TOTAL VOLUMES :	NL 104	NT 1662	NR 344	SL 1272	ST 2892	SR 148	EL 152	ET 61	ER 146	WL 588	WT 47	WR 883	TOTAL 8299
APPROACH %'s :	4.93%	78.77%	16.30%	29.50%	67.07%	3.43%	42.34%	16.99%	40.67%	38.74%	3.10%	58.17%	

PEAK HR START TIME :	5:00 PM												TOTAL
PEAK HR VOL :	50	852	209	671	1637	76	86	28	80	335	27	471	4522
PEAK HR FACTOR :	0.896			0.923			0.746			0.890			0.915

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA11_1071_004

Day: TUESDAY

City: City of Silverado

Date: 5/24/2011

AM														
NS/EW Streets:		Portola Pkwy			Portola Pkwy			SR-241			SR-241			
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:		NL 2	NT 3	NR 0	SL 2	ST 2	SR 0	EL 1	ET 0	ER 1	WL 1	WT 0	WR 1	TOTAL
7:00 AM		107	234	3	17	88	64	10		22	9		107	661
7:15 AM		91	226	2	44	117	53	26		20	12		116	707
7:30 AM		111	221	6	38	182	50	29		32	18		126	813
7:45 AM		87	383	9	70	186	60	40		40	21		180	1076
8:00 AM		91	323	6	35	110	50	39		21	17		177	869
8:15 AM		98	269	6	35	107	46	23		26	19		165	794
8:30 AM		92	247	3	32	102	28	36		18	16		106	680
8:45 AM		61	221	7	26	92	30	27		23	14		107	608
TOTAL VOLUMES :		NL 738	NT 2124	NR 42	SL 297	ST 984	SR 381	EL 230	ET 0	ER 202	WL 126	WT 0	WR 1084	TOTAL 6208
APPROACH %'s :		25.41%	73.14%	1.45%	17.87%	59.21%	22.92%	53.24%	0.00%	46.76%	10.41%	0.00%	89.59%	

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	387	1196	27	178	585	206	131	0	119	75	0	648	3552
PEAK HR FACTOR :	0.840			0.767			0.781			0.899			0.825

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA11_1071_004

Day: TUESDAY

City: City of Silverado

Date: 5/24/2011

PM													
NS/EW Streets:	Portola Pkwy			Portola Pkwy			SR-241			SR-241			TOTAL
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL 2	NT 3	NR 0	SL 2	ST 2	SR 0	EL 1	ET 0	ER 1	WL 1	WT 0	WR 1	
LANES:													
4:00 PM	33	183	8	95	252	42	15		65	13		47	753
4:15 PM	32	170	11	88	268	27	20		58	11		58	743
4:30 PM	36	181	4	83	306	36	15		64	10		33	768
4:45 PM	26	192	7	122	283	20	30		65	19		54	818
5:00 PM	33	151	12	135	378	44	36		77	13		51	930
5:15 PM	40	190	11	158	393	36	39		98	14		53	1032
5:30 PM	29	199	8	118	353	44	35		92	17		57	952
5:45 PM	35	224	15	134	313	25	28		90	14		49	927

TOTAL VOLUMES :	NL 264	NT 1490	NR 76	SL 933	ST 2546	SR 274	EL 218	ET 0	ER 609	WL 111	WT 0	WR 402	TOTAL 6923
APPROACH %'s :	14.43%	81.42%	4.15%	24.86%	67.84%	7.30%	26.36%	0.00%	73.64%	21.64%	0.00%	78.36%	

PEAK HR START TIME:	5:00 PM												TOTAL
PEAK HR VOL :	137	764	46	545	1437	149	138	0	357	58	0	210	3841
PEAK HR FACTOR :	0.864			0.908			0.903			0.905			0.930

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA11_1084_001

Day: WEDNESDAY

City: City of Silverado

Date: 6/8/2011

AM													
NS/EW Streets:	Santiago Canyon Rd			Santiago Canyon Rd			Modjeska Grade Rd			Modjeska Grade Rd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 0	ER 0	WL 0	WT 1	WR 0	TOTAL
7:00 AM		62	1	0	51					7			121
7:15 AM		92	1	0	66					10			169
7:30 AM		82	5	0	85					9			181
7:45 AM		64	2	0	75					5			146
8:00 AM		84	2	0	66					4			156
8:15 AM		68	1	1	52					7			129
8:30 AM		41	1	0	71					7			120
8:45 AM		36	3	0	62					3			104
TOTAL VOLUMES :	NL 0	NT 529	NR 16	SL 1	ST 528	SR 0	EL 0	ET 0	ER 0	WL 52	WT 0	WR 0	TOTAL 1126
APPROACH %'s :	0.00%	97.06%	2.94%	0.19%	99.81%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	100.00%	0.00%	0.00%	
PEAK HR START TIME :	7:15 AM												TOTAL
PEAK HR VOL :	0	322	10	0	292	0	0	0	0	28	0	0	652
PEAK HR FACTOR :	0.892			0.859			0.000			0.700			0.901

CONTROL : 1-Way Stop (WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA11_1084_001

Day: WEDNESDAY

City: City of Silverado

Date: 6/8/2011

PM													
NS/EW Streets:	Santiago Canyon Rd			Santiago Canyon Rd			Modjeska Grade Rd			Modjeska Grade Rd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 0	ER 0	WL 0	WT 1	WR 0	TOTAL
4:00 PM		76	5	0	49					3		1	134
4:15 PM		99	4	0	70					6		1	180
4:30 PM		88	6	0	75					4		0	173
4:45 PM		93	10	0	68					4		0	175
5:00 PM		82	11	1	87					2		2	185
5:15 PM		114	8	1	73					5		0	201
5:30 PM		87	9	0	98					5		0	199
5:45 PM		78	5	1	87					3		0	174
TOTAL VOLUMES :	NL 0	NT 717	NR 58	SL 3	ST 607	SR 0	EL 0	ET 0	ER 0	WL 32	WT 0	WR 4	TOTAL 1421
APPROACH %'s :	0.00%	92.52%	7.48%	0.49%	99.51%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	88.89%	0.00%	11.11%	
PEAK HR START TIME:	4:45 PM												
PEAK HR VOL:	0	376	38	2	326	0	0	0	0	16	0	2	780
PEAK HR FACTOR:		0.848			0.837			0.000			0.900		0.945

CONTROL : 1-Way Stop (WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA11_1071_001

Day: TUESDAY

City: City of Silverado

Date: 5/24/2011

AM													
NS/EW Streets:	El Toro Rd/Santiago Canyon Rd			El Toro Rd/Santiago Canyon Rd			Live Oak Canyon Rd			Live Oak Canyon Rd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 1	NR 0	SL 1	ST 1	SR 0	EL 0	ET 0	ER 0	WL 0	WT 1	WR 0	TOTAL
7:00 AM		43	7	10	53					12		19	144
7:15 AM		56	5	4	73					15		24	177
7:30 AM		53	13	10	85					23		11	195
7:45 AM		45	21	9	97					23		12	207
8:00 AM		48	16	18	61					11		19	173
8:15 AM		43	8	9	62					25		18	165
8:30 AM		37	15	10	49					16		5	132
8:45 AM		26	10	9	49					23		13	130
TOTAL VOLUMES :	NL 0	NT 351	NR 95	SL 79	ST 529	SR 0	EL 0	ET 0	ER 0	WL 148	WT 0	WR 121	TOTAL 1323
APPROACH %'s :	0.00%	78.70%	21.30%	12.99%	87.01%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	55.02%	0.00%	44.98%	
PEAK HR START TIME :	7:15 AM												TOTAL
PEAK HR VOL :	0	202	55	41	316	0	0	0	0	72	0	66	752
PEAK HR FACTOR :		0.973			0.842			0.000			0.885		0.908

CONTROL : 1-Way Stop (WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA11_1071_001

Day: TUESDAY

City: City of Silverado

Date: 5/24/2011

PM													
NS/EW Streets:	El Toro Rd/Santiago Canyon Rd			El Toro Rd/Santiago Canyon Rd			Live Oak Canyon Rd			Live Oak Canyon Rd			TOTAL
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 1	NR 0	SL 1	ST 1	SR 0	EL 0	ET 0	ER 0	WL 0	WT 1	WR 0	
4:00 PM		85	25	12	51					22		18	213
4:15 PM		88	31	10	37					12		12	190
4:30 PM		77	21	10	42					13		7	170
4:45 PM		99	33	15	53					15		19	234
5:00 PM		90	29	24	53					15		16	227
5:15 PM		92	33	18	59					16		13	231
5:30 PM		96	29	25	46					15		13	224
5:45 PM		76	21	32	55					18		12	214
TOTAL VOLUMES :	NL 0	NT 703	NR 222	SL 146	ST 396	SR 0	EL 0	ET 0	ER 0	WL 126	WT 0	WR 110	TOTAL 1703
APPROACH %'s :	0.00%	76.00%	24.00%	26.94%	73.06%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	53.39%	0.00%	46.61%	
PEAK HR START TIME :	4:45 PM												TOTAL
PEAK HR VOL :	0	377	124	82	211	0	0	0	0	61	0	61	916
PEAK HR FACTOR :	0.949			0.951			0.000			0.897			0.979

CONTROL : 1-Way Stop (WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA11_1071_002

Day: TUESDAY

City: City of Silverado

Date: 5/24/2011

AM

NS/EW Streets:		El Toro Rd			El Toro Rd			Glenn Ranch Rd			Glenn Ranch Rd			
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:		NL 1	NT 1	NR 0	SL 0	ST 2	SR 0	EL 1	ET 0	ER 1	WL 0	WT 0	WR 0	TOTAL
7:00 AM		22	56			71	36	13		26				224
7:15 AM		30	60			108	33	9		34				274
7:30 AM		69	70			183	43	11		64				440
7:45 AM		98	70			156	73	19		47				463
8:00 AM		31	80			106	49	11		49				326
8:15 AM		22	55			71	48	17		22				235
8:30 AM		24	64			69	41	15		29				242
8:45 AM		29	41			69	43	11		27				220
TOTAL VOLUMES :		NL 325	NT 496	NR 0	SL 0	ST 833	SR 366	EL 106	ET 0	ER 298	WL 0	WT 0	WR 0	TOTAL 2424
APPROACH %'s :		39.59%	60.41%	0.00%	0.00%	69.47%	30.53%	26.24%	0.00%	73.76%	#DIV/0!	#DIV/0!	#DIV/0!	

PEAK HR START TIME	7:15 AM												TOTAL
PEAK HR VOL	228	280	0	0	553	198	50	0	194	0	0	0	1503
PEAK HR FACTOR	0.756			0.820			0.813			0.000			0.812

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA11_1071_002

Day: TUESDAY

City: City of Silverado

Date: 5/24/2011

PM

NS/EW Streets:		El Toro Rd			El Toro Rd			Glenn Ranch Rd			Glenn Ranch Rd			
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:		NL 1	NT 1	NR 0	SL 0	ST 2	SR 0	EL 1	ET 0	ER 1	WL 0	WT 0	WR 0	TOTAL
4:00 PM		20	102			89	16	50		33				310
4:15 PM		30	110			57	14	43		26				280
4:30 PM		28	101			74	12	58		37				310
4:45 PM		34	122			87	17	50		37				347
5:00 PM		29	113			74	7	65		45				333
5:15 PM		37	128			88	31	76		46				406
5:30 PM		65	118			92	12	56		43				386
5:45 PM		47	94			88	31	49		37				346
TOTAL VOLUMES :		NL 290	NT 888	NR 0	SL 0	ST 649	SR 140	EL 447	ET 0	ER 304	WL 0	WT 0	WR 0	TOTAL 2718
APPROACH %'s :		24.62%	75.38%	0.00%	0.00%	82.26%	17.74%	59.52%	0.00%	40.48%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :		445 PM												TOTAL
PEAK HR VOL :		165	481	0	0	341	67	247	0	171	0	0	0	1472
PEAK HR FACTOR :		0.883			0.857			0.857			0.000			0.906

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA11_1071_006

Day: TUESDAY

City: City of Silverado

Date: 5/24/2011

AM													
NS/EW Streets:	Marguerite Pkwy/Saddleback Church Rd	Marguerite Pkwy/Saddleback Church Rd	El Toro Rd			El Toro Rd							
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 1.5	NR 1	SL 1	ST 1.5	SR 1.5	EL 2	ET 2	ER 1	WL 2	WT 2	WR 0	TOTAL
7:00 AM	55	1	52	0	0	0	0	28	14	72	52	2	276
7:15 AM	64	2	58	1	0	0	0	27	20	90	70	0	332
7:30 AM	84	2	70	0	3	3	1	31	32	104	138	1	469
7:45 AM	88	2	70	0	3	0	0	43	46	155	95	0	502
8:00 AM	62	1	59	0	1	0	1	34	22	95	84	1	360
8:15 AM	72	0	66	0	0	0	0	27	15	82	68	1	331
8:30 AM	60	2	50	0	0	0	0	33	21	53	46	1	266
8:45 AM	48	5	49	0	1	0	0	32	19	55	54	6	269
TOTAL VOLUMES :	NL 533	NT 15	NR 474	SL 1	ST 8	SR 3	EL 2	ET 255	ER 189	WL 706	WT 607	WR 12	TOTAL 2805
APPROACH %'s :	52.15%	1.47%	46.38%	8.33%	66.67%	25.00%	0.45%	57.17%	42.38%	53.28%	45.81%	0.91%	

PEAK HR START TIME :	7:15 AM												TOTAL
PEAK HR VOL :	298	7	257	1	7	3	2	135	120	444	387	2	1663
PEAK HR FACTOR :	0.878			0.458			0.722			0.833			0.828

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA11_1071_006

Day: TUESDAY

City: City of Silverado

Date: 5/24/2011

PM

NS/EW Streets:	Marguerite Pkwy/Saddleback Church Rd			Marguerite Pkwy/Saddleback Church Rd			El Toro Rd			El Toro Rd			TOTAL
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1.5	NT 1.5	NR 1	SL 1	ST 1.5	SR 1.5	EL 2	ET 2	ER 1	WL 2	WT 2	WR 0	
4:00 PM	25	9	92	3	10	6	4	63	42	70	47	2	373
4:15 PM	18	0	102	3	7	0	0	57	53	75	37	2	354
4:30 PM	34	4	96	0	3	1	0	69	49	65	48	1	370
4:45 PM	29	6	93	0	6	1	1	79	59	91	49	0	414
5:00 PM	32	4	97	3	5	3	1	65	68	87	35	1	401
5:15 PM	31	13	110	5	6	4	0	79	75	93	51	1	468
5:30 PM	33	8	135	4	15	5	2	71	80	88	40	5	486
5:45 PM	42	11	89	3	15	4	4	76	76	84	51	4	459
TOTAL VOLUMES :	NL 244	NT 55	NR 814	SL 21	ST 67	SR 24	EL 12	ET 559	ER 502	WL 653	WT 358	WR 16	TOTAL 3325
APPROACH %'s :	21.92%	4.94%	73.14%	18.75%	59.82%	21.43%	1.12%	52.10%	46.78%	63.58%	34.86%	1.56%	

PEAK HR START TIME :	5:00 PM												TOTAL
PEAK HR VOL :	138	36	431	15	41	16	7	291	299	352	177	11	1814
PEAK HR FACTOR :	0.859			0.750			0.957			0.931			0.933

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA11_1071_005

Day: TUESDAY

City: City of Silverado

Date: 5/24/2011

AM													
NS/EW Streets:	Portola Pkwy/Santa Margarita Pkwy			Portola Pkwy/Santa Margarita Pkwy			El Toro Rd			El Toro Rd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 2	NT 4	NR 0	SL 2	ST 3	SR 1	EL 1	ET 3	ER 1	WL 1	WT 3	WR 1	TOTAL
7:00 AM	106	239	6	10	82	46	48	24	66	1	113	35	776
7:15 AM	112	228	3	4	110	47	53	26	85	6	101	34	809
7:30 AM	135	239	8	8	124	51	47	39	98	13	191	39	992
7:45 AM	154	385	19	8	198	75	88	48	119	14	158	54	1320
8:00 AM	150	304	4	7	79	60	94	62	78	6	112	42	998
8:15 AM	162	281	2	3	67	68	68	27	88	3	102	40	911
8:30 AM	103	236	7	11	77	45	68	37	64	3	96	38	785
8:45 AM	124	240	4	11	91	42	80	31	74	3	71	35	806
TOTAL VOLUMES :	1046	2152	53	62	828	434	546	294	672	49	944	317	7397
APPROACH %'s :	32.17%	66.20%	1.63%	4.68%	62.54%	32.78%	36.11%	19.44%	44.44%	3.74%	72.06%	24.20%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	601	1209	33	26	468	254	297	176	383	36	563	175	4221
PEAK HR FACTOR :	0.826			0.665			0.839			0.796			0.799

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: CA11_1071_005

Day: TUESDAY

City: City of Silverado

Date: 5/24/2011

PM

NS/EW Streets:		Portola Pkwy/Santa Margarita Pkwy			Portola Pkwy/Santa Margarita Pkwy			El Toro Rd			El Toro Rd			
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:		NL 2	NT 4	NR 0	SL 2	ST 3	SR 1	EL 1	ET 3	ER 1	WL 1	WT 3	WR 1	TOTAL
4:00 PM		87	143	11	34	260	63	55	66	102	5	63	28	917
4:15 PM		70	185	11	18	264	55	39	84	129	1	45	19	920
4:30 PM		75	148	5	38	215	80	61	93	134	3	51	20	923
4:45 PM		92	143	13	42	256	87	58	92	144	5	57	31	1020
5:00 PM		94	122	5	41	279	97	53	100	149	6	48	24	1018
5:15 PM		126	167	17	62	313	115	53	97	179	4	59	27	1219
5:30 PM		89	191	2	52	281	102	68	108	156	4	51	27	1131
5:45 PM		93	192	6	52	281	104	93	102	169	6	65	29	1192
TOTAL VOLUMES :		NL 726	NT 1291	NR 70	SL 339	ST 2149	SR 703	EL 480	ET 742	ER 1162	WL 34	WT 439	WR 205	TOTAL 8340
APPROACH %'s :		34.79%	61.86%	3.35%	10.62%	67.35%	22.03%	20.13%	31.12%	48.74%	5.01%	64.75%	30.24%	

PEAK HR START TIME :	5:00 PM												TOTAL
PEAK HR VOL :	402	672	30	207	1154	418	267	407	653	20	223	107	4560
PEAK HR FACTOR :	0.890			0.908			0.911			0.875			0.935

CONTROL : Signalized

24 Hour 2-Way Average Daily Traffic Counts (ADTs)

VOLUME

Santiago Canyon Rd N/o Ridgeline Rd

Day: Tuesday

Date: 5/24/2011

City: Silverado

Project #: CA11_1070_001

DAILY TOTALS					NB	SB	EB		WB		Total
					3,889	3,608	0		0		7,497
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
00:00	0	2			2	12:00	40	29			69
00:15	1	2			3	12:15	35	29			64
00:30	2	3			5	12:30	39	36			75
00:45	3	6	0	7	3	12:45	36	150	42	136	286
01:00	3	1			4	13:00	43	45			88
01:15	3	2			5	13:15	38	37			75
01:30	6	0			6	13:30	50	43			93
01:45	3	15	0	3	3	13:45	36	167	49	174	341
02:00	2	2			4	14:00	43	38			81
02:15	2	1			3	14:15	52	36			88
02:30	1	1			2	14:30	57	51			108
02:45	1	6	3	7	4	14:45	73	225	56	181	406
03:00	2	1			3	15:00	68	36			104
03:15	0	2			2	15:15	83	52			135
03:30	2	2			4	15:30	108	52			160
03:45	1	5	6	11	7	15:45	81	340	55	195	535
04:00	4	5			9	16:00	116	67			183
04:15	2	7			9	16:15	114	53			167
04:30	2	12			14	16:30	97	59			156
04:45	9	17	15	39	24	16:45	136	463	78	257	720
05:00	14	11			25	17:00	114	84			198
05:15	24	16			40	17:15	122	78			200
05:30	27	31			58	17:30	114	89			203
05:45	39	104	35	93	74	17:45	95	445	107	358	803
06:00	43	25			68	18:00	93	114			207
06:15	35	59			94	18:15	58	84			142
06:30	71	52			123	18:30	75	63			138
06:45	83	232	50	186	133	18:45	53	279	54	315	594
07:00	84	72			156	19:00	37	44			81
07:15	116	82			198	19:15	45	48			93
07:30	87	103			190	19:30	30	48			78
07:45	76	363	101	358	177	19:45	37	149	35	175	324
08:00	89	79			168	20:00	33	50			83
08:15	75	80			155	20:15	29	53			82
08:30	41	62			103	20:30	27	42			69
08:45	51	256	62	283	113	20:45	22	111	44	189	300
09:00	33	54			87	21:00	27	42			69
09:15	43	45			88	21:15	30	26			56
09:30	23	42			65	21:30	11	31			42
09:45	28	127	40	181	68	21:45	18	86	14	113	199
10:00	39	35			74	22:00	13	13			26
10:15	33	40			73	22:15	22	11			33
10:30	28	34			62	22:30	23	15			38
10:45	29	129	27	136	56	22:45	10	68	7	46	114
11:00	34	36			70	23:00	8	10			18
11:15	27	28			55	23:15	4	8			12
11:30	26	26			52	23:30	5	5			10
11:45	34	121	49	139	83	23:45	8	25	3	26	51
TOTALS	1381	1443			2824	TOTALS	2508	2165			4673
SPLIT %	48.9%	51.1%			37.7%	SPLIT %	53.7%	46.3%			62.3%

DAILY TOTALS					NB	SB	EB	WB	Total
					3,889	3,608	0	0	7,497
AM Peak Hour	06:45	07:15	07:15	PM Peak Hour	16:45	17:30	16:45		
AM Pk Volume	370	365	733	PM Pk Volume	486	394	815		
Pk Hr Factor	0.797	0.886	0.926	Pk Hr Factor	0.893	0.864	0.952		
7 - 9 Volume	619	641	1260	4 - 6 Volume	908	615	1523		
7 - 9 Peak Hour	07:15	07:15	07:15	4 - 6 Peak Hour	16:45	17:00	16:45		
7 - 9 Pk Volume	368	365	733	4 - 6 Pk Volume	486	358	815		
Pk Hr Factor	0.793	0.886	0.926	Pk Hr Factor	0.893	0.836	0.952		

VOLUME

Santiago Canyon Rd/El Toro Rd N/o Live Oak Canyon Rd

Day: Tuesday

Date: 5/24/2011

City: Silverado

Project #: CA11_1070_002

DAILY TOTALS					NB	SB	EB		WB		Total	
					3,397	3,327	0		0		6,724	
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL	
00:00	0	1			1	12:00	37	29			66	
00:15	1	1			2	12:15	36	26			62	
00:30	3	2			5	12:30	43	37			80	
00:45	2	6	1	5	3	12:45	33	149	36	128	69	277
01:00	2	2			4	13:00	36	45			81	
01:15	3	0			3	13:15	37	39			76	
01:30	5	1			6	13:30	49	41			90	
01:45	2	12	1	4	3	13:45	35	157	47	172	82	329
02:00	1	0			1	14:00	41	32			73	
02:15	1	1			2	14:15	55	31			86	
02:30	1	0			1	14:30	50	48			98	
02:45	1	4	2	3	3	14:45	60	206	62	173	122	379
03:00	0	0			0	15:00	58	52			110	
03:15	0	1			1	15:15	92	50			142	
03:30	0	1			1	15:30	94	58			152	
03:45	2	2	3	5	5	15:45	75	319	50	210	125	529
04:00	2	3			5	16:00	98	66			164	
04:15	2	4			6	16:15	99	47			146	
04:30	2	5			7	16:30	81	50			131	
04:45	7	13	12	24	19	16:45	115	393	64	227	179	620
05:00	5	11			16	17:00	113	80			193	
05:15	16	12			28	17:15	107	75			182	
05:30	14	18			32	17:30	108	72			180	
05:45	20	55	28	69	48	17:45	86	414	84	311	170	725
06:00	31	20			51	18:00	88	108			196	
06:15	27	46			73	18:15	53	84			137	
06:30	53	43			96	18:30	73	58			131	
06:45	47	158	46	155	93	18:45	51	265	46	296	97	561
07:00	64	63			127	19:00	43	45			88	
07:15	77	75			152	19:15	49	42			91	
07:30	64	104			168	19:30	26	41			67	
07:45	59	264	100	342	159	19:45	25	143	31	159	56	302
08:00	67	75			142	20:00	29	51			80	
08:15	59	69			128	20:15	28	43			71	
08:30	40	59			99	20:30	23	42			65	
08:45	39	205	62	265	101	20:45	23	103	40	176	63	279
09:00	31	54			85	21:00	28	35			63	
09:15	37	44			81	21:15	30	23			53	
09:30	25	34			59	21:30	14	23			37	
09:45	24	117	41	173	65	21:45	20	92	9	90	29	182
10:00	39	35			74	22:00	12	11			23	
10:15	28	38			66	22:15	22	10			32	
10:30	31	36			67	22:30	17	10			27	
10:45	21	119	28	137	49	22:45	9	60	7	38	16	98
11:00	33	38			71	23:00	9	6			15	
11:15	27	25			52	23:15	5	6			11	
11:30	23	25			48	23:30	3	3			6	
11:45	32	115	59	147	91	23:45	9	26	3	18	12	44
TOTALS	1070	1329			2399	TOTALS	2327	1998			4325	
SPLIT %	44.6%	55.4%			35.7%	SPLIT %	53.8%	46.2%			64.3%	

DAILY TOTALS					NB	SB	EB	WB	Total
					3,397	3,327	0	0	6,724
AM Peak Hour	07:15	07:15	07:15	PM Peak Hour	16:45	17:30	16:45		
AM Pk Volume	267	354	621	PM Pk Volume	443	348	734		
Pk Hr Factor	0.867	0.851	0.924	Pk Hr Factor	0.963	0.806	0.951		
7 - 9 Volume	469	607	1076	4 - 6 Volume	807	538	1345		
7 - 9 Peak Hour	07:15	07:15	07:15	4 - 6 Peak Hour	16:45	17:00	16:45		
7 - 9 Pk Volume	267	354	621	4 - 6 Pk Volume	443	311	734		
Pk Hr Factor	0.867	0.851	0.924	Pk Hr Factor	0.963	0.926	0.951		

VOLUME

Live Oak Canyon Rd E/o Santiago Canyon Rd/EI Toro Rd

Day: Tuesday

Date: 5/24/2011

City: Silverado

Project #: CA11_1070_003

DAILY TOTALS					NB	SB					EB	WB	Total		
					0	0					1,629	1,576	3,205		
AM Period	NB	SB	EB	WB	TOTAL		PM Period	NB	SB	EB	WB	TOTAL			
00:00			3	1	4		12:00			25	15	40			
00:15			4	3	7		12:15			19	29	48			
00:30			1	1	2		12:30			17	31	48			
00:45			0	8	1	6	12:45			21	82	15	90	36	172
01:00			2	2	4		13:00			22	24	46			
01:15			1	0	1		13:15			25	21	46			
01:30			1	1	2		13:30			30	32	62			
01:45			0	4	3	6	13:45			31	108	14	91	45	199
02:00			0	0	0		14:00			22	29	51			
02:15			0	0	0		14:15			19	24	43			
02:30			0	0	0		14:30			31	19	50			
02:45			0	2	2	2	14:45			35	107	44	116	79	223
03:00			0	0	0		15:00			30	25	55			
03:15			0	0	0		15:15			35	25	60			
03:30			1	2	3		15:30			32	36	68			
03:45			0	1	1	3	15:45			31	128	23	109	54	237
04:00			1	0	1		16:00			36	43	79			
04:15			0	0	0		16:15			39	27	66			
04:30			1	3	4		16:30			31	20	51			
04:45			0	2	1	4	16:45			48	154	37	127	85	281
05:00			1	2	3		17:00			53	26	79			
05:15			3	8	11		17:15			51	28	79			
05:30			6	4	10		17:30			54	28	82			
05:45			5	15	8	22	17:45			53	211	29	111	82	322
06:00			6	9	15		18:00			50	37	87			
06:15			7	19	26		18:15			43	12	55			
06:30			15	27	42		18:30			31	33	64			
06:45			10	38	23	78	18:45			32	156	24	106	56	262
07:00			16	30	46		19:00			34	33	67			
07:15			15	41	56		19:15			22	18	40			
07:30			21	34	55		19:30			24	21	45			
07:45			29	81	35	140	19:45			16	96	18	90	34	186
08:00			29	30	59		20:00			17	20	37			
08:15			17	40	57		20:15			16	16	32			
08:30			25	22	47		20:30			10	16	26			
08:45			20	91	34	126	20:45			11	54	17	69	28	123
09:00			15	16	31		21:00			12	11	23			
09:15			18	23	41		21:15			18	12	30			
09:30			16	17	33		21:30			17	7	24			
09:45			13	62	19	75	21:45			16	63	7	37	23	100
10:00			13	16	29		22:00			7	7	14			
10:15			10	12	22		22:15			7	6	13			
10:30			17	13	30		22:30			5	4	9			
10:45			15	55	11	52	22:45			4	23	6	23	10	46
11:00			24	19	43		23:00			4	2	6			
11:15			22	13	35		23:15			5	5	10			
11:30			13	25	38		23:30			3	2	5			
11:45			15	74	23	80	23:45			4	16	4	13	8	29
TOTALS			431	594	1025		TOTALS			1198	982	2180			
SPLIT %			42.0%	58.0%	32.0%		SPLIT %			55.0%	45.0%	68.0%			

DAILY TOTALS					NB	SB					EB	WB	Total	
					0	0					1,629	1,576	3,205	
AM Peak Hour			07:45	07:00	07:30		PM Peak Hour			17:00	14:45	17:15		
AM Pk Volume			100	140	235		PM Pk Volume			211	130	330		
Pk Hr Factor			0.862	0.854	0.918		Pk Hr Factor			0.977	0.739	0.948		
7 - 9 Volume			172	266	438		4 - 6 Volume			365	238	603		
7 - 9 Peak Hour			07:45	07:00	07:30		4 - 6 Peak Hour			17:00	16:00	16:45		
7 - 9 Pk Volume			100	140	235		4 - 6 Pk Volume			211	127	325		
Pk Hr Factor			0.862	0.854	0.918		Pk Hr Factor			0.977	0.738	0.956		

VOLUME

El Toro Rd N/o Glenn Ranch Rd

Day: Tuesday

Date: 5/24/2011

City: Silverado

Project #: CA11_1070_004

DAILY TOTALS					NB	SB	EB		WB		Total
					5,895	5,700	0		0		11,595
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
00:00	8	6			14	12:00	75	57			132
00:15	9	4			13	12:15	65	59			124
00:30	8	5			13	12:30	75	76			151
00:45	8	33	2	17	10	12:45	76	291	56	248	132
01:00	5	2			7	13:00	68	70			138
01:15	4	1			5	13:15	77	70			147
01:30	8	1			9	13:30	70	64			134
01:45	2	19	1	5	3	13:45	78	293	68	272	146
02:00	2	2			4	14:00	72	64			136
02:15	2	2			4	14:15	100	83			183
02:30	1	1			2	14:30	79	83			162
02:45	3	8	4	9	7	14:45	105	356	101	331	206
03:00	0	3			3	15:00	123	81			204
03:15	0	1			1	15:15	164	85			249
03:30	0	3			3	15:30	131	78			209
03:45	2	2	4	11	6	15:45	123	541	79	323	202
04:00	4	4			8	16:00	157	106			263
04:15	3	8			11	16:15	151	71			222
04:30	2	12			14	16:30	156	87			243
04:45	6	15	21	45	27	16:45	169	633	104	368	273
05:00	4	18			22	17:00	181	82			263
05:15	15	23			38	17:15	195	120			315
05:30	15	41			56	17:30	181	101			282
05:45	18	52	37	119	55	17:45	140	697	117	420	257
06:00	21	39			60	18:00	158	115			273
06:15	30	84			114	18:15	129	105			234
06:30	51	106			157	18:30	140	97			237
06:45	54	156	141	370	195	18:45	131	558	65	382	196
07:00	66	106			172	19:00	117	70			187
07:15	70	139			209	19:15	84	65			149
07:30	83	223			306	19:30	84	59			143
07:45	85	304	232	700	317	19:45	64	349	60	254	124
08:00	87	155			242	20:00	77	68			145
08:15	76	118			194	20:15	64	72			136
08:30	75	108			183	20:30	65	76			141
08:45	53	291	110	491	163	20:45	67	273	61	277	128
09:00	48	94			142	21:00	68	51			119
09:15	51	85			136	21:15	66	35			101
09:30	37	68			105	21:30	53	43			96
09:45	35	171	73	320	108	21:45	50	237	27	156	77
10:00	50	68			118	22:00	31	29			60
10:15	48	55			103	22:15	43	12			55
10:30	45	52			97	22:30	41	14			55
10:45	42	185	58	233	100	22:45	22	137	13	68	35
11:00	64	55			119	23:00	17	14			31
11:15	52	37			89	23:15	17	9			26
11:30	41	70			111	23:30	14	8			22
11:45	70	227	78	240	148	23:45	19	67	10	41	29
TOTALS	1463	2560			4023	TOTALS	4432	3140			7572
SPLIT %	36.4%	63.6%			34.7%	SPLIT %	58.5%	41.5%			65.3%

DAILY TOTALS					NB	SB	EB	WB	Total
					5,895	5,700	0	0	11,595
AM Peak Hour	07:30	07:15	07:15	PM Peak Hour	16:45	17:15	16:45		
AM Pk Volume	331	749	1074	PM Pk Volume	726	453	1133		
PK Hr Factor	0.951	0.807	0.847	PK Hr Factor	0.931	0.944	0.899		
7 - 9 Volume	595	1191	1786	4 - 6 Volume	1330	788	2118		
7 - 9 Peak Hour	07:30	07:15	07:15	4 - 6 Peak Hour	16:45	17:00	16:45		
7 - 9 Pk Volume	331	749	1074	4 - 6 Pk Volume	726	420	1133		
PK Hr Factor	0.951	0.807	0.847	PK Hr Factor	0.931	0.875	0.899		

VOLUME

Portola Pkwy S/o Glenn Ranch Rd

Day: Tuesday

Date: 5/24/2011

City: Silverado

Project #: CA11_1070_007

DAILY TOTALS					NB	SB	EB		WB		Total	
					16,879	16,958	0		0		33,837	
AM Period	NB	SB	EB	WB	TOTAL		PM Period	NB	SB	EB	WB	TOTAL
00:00	21	22			43		12:00	246	201			447
00:15	11	20			31		12:15	229	203			432
00:30	14	19			33		12:30	310	200			510
00:45	8	54	28	89	36	143	12:45	309	1094	218	822	527 1916
01:00	5	25			30		13:00	246	224			470
01:15	10	13			23		13:15	262	247			509
01:30	8	13			21		13:30	234	250			484
01:45	6	29	9	60	15	89	13:45	224	966	286	1007	510 1973
02:00	3	9			12		14:00	252	298			550
02:15	7	15			22		14:15	249	262			511
02:30	6	11			17		14:30	215	306			521
02:45	4	20	8	43	12	63	14:45	257	973	344	1210	601 2183
03:00	6	5			11		15:00	253	322			575
03:15	5	3			8		15:15	339	263			602
03:30	9	9			18		15:30	261	339			600
03:45	25	45	13	30	38	75	15:45	317	1170	307	1231	624 2401
04:00	24	9			33		16:00	247	375			622
04:15	24	12			36		16:15	249	367			616
04:30	19	22			41		16:30	238	419			657
04:45	47	114	21	64	68	178	16:45	267	1001	424	1585	691 2586
05:00	49	28			77		17:00	249	554			803
05:15	45	37			82		17:15	267	606			873
05:30	80	58			138		17:30	283	524			807
05:45	145	319	78	201	223	520	17:45	312	1111	466	2150	778 3261
06:00	108	68			176		18:00	223	476			699
06:15	160	99			259		18:15	238	436			674
06:30	194	173			367		18:30	246	422			668
06:45	302	764	197	537	499	1301	18:45	236	943	326	1660	562 2603
07:00	347	164			511		19:00	266	307			573
07:15	364	203			567		19:15	191	258			449
07:30	372	274			646		19:30	190	269			459
07:45	600	1683	301	942	901	2625	19:45	192	839	248	1082	440 1921
08:00	540	205			745		20:00	185	203			388
08:15	462	177			639		20:15	232	180			412
08:30	383	171			554		20:30	158	192			350
08:45	362	1747	153	706	515	2453	20:45	113	688	121	696	234 1384
09:00	286	138			424		21:00	120	135			255
09:15	242	145			387		21:15	102	107			209
09:30	201	133			334		21:30	90	110			200
09:45	210	939	148	564	358	1503	21:45	97	409	108	460	205 869
10:00	204	138			342		22:00	58	113			171
10:15	194	126			320		22:15	80	73			153
10:30	174	155			329		22:30	42	92			134
10:45	199	771	165	584	364	1355	22:45	35	215	37	315	72 530
11:00	206	171			377		23:00	29	52			81
11:15	206	191			397		23:15	33	37			70
11:30	248	211			459		23:30	21	37			58
11:45	222	882	203	776	425	1658	23:45	20	103	18	144	38 247
TOTALS	7367	4596			11963		TOTALS	9512	12362			21874
SPLIT %	61.6%	38.4%			35.4%		SPLIT %	43.5%	56.5%			64.6%

DAILY TOTALS					NB	SB	EB	WB	Total
					16,879	16,958	0	0	33,837
AM Peak Hour	07:45	07:15	07:30	PM Peak Hour	15:00	17:00	17:00		
AM Pk Volume	1985	983	2931	PM Pk Volume	1170	2150	3261		
Pk Hr Factor	0.827	0.816	0.813	Pk Hr Factor	0.863	0.887	0.934		
7 - 9 Volume	3430	1648	5078	4 - 6 Volume	2112	3735	5847		
7 - 9 Peak Hour	07:45	07:15	07:30	4 - 6 Peak Hour	17:00	17:00	17:00		
7 - 9 Pk Volume	1985	983	2931	4 - 6 Pk Volume	1111	2150	3261		
Pk Hr Factor	0.827	0.816	0.813	Pk Hr Factor	0.890	0.887	0.934		

VOLUME

Portola Pkwy S/o SR-241

Day: Tuesday
Date: 5/24/2011City: Silverado
Project #: CA11_1070_008

DAILY TOTALS					NB	SB	EB		WB		Total	
					15,390	15,982	0		0		31,372	
AM Period	NB	SB	EB	WB	TOTAL		PM Period	NB	SB	EB	WB	TOTAL
00:00	21	26			47		12:00	215	228			443
00:15	10	27			37		12:15	225	229			454
00:30	10	20			30		12:30	290	233			523
00:45	5	46	36	109	41	155	12:45	275	1005	199	889	474 1894
01:00	3	27			30		13:00	219	230			449
01:15	6	12			18		13:15	271	251			522
01:30	8	14			22		13:30	185	229			414
01:45	6	23	8	61	14	84	13:45	189	864	263	973	452 1837
02:00	6	10			16		14:00	229	264			493
02:15	8	17			25		14:15	215	248			463
02:30	5	12			17		14:30	206	280			486
02:45	3	22	8	47	11	69	14:45	205	855	294	1086	499 1941
03:00	3	7			10		15:00	216	294			510
03:15	8	5			13		15:15	285	294			579
03:30	11	9			20		15:30	226	294			520
03:45	20	42	17	38	37	80	15:45	230	957	304	1186	534 2143
04:00	29	7			36		16:00	229	330			559
04:15	20	10			30		16:15	210	315			525
04:30	21	18			39		16:30	201	360			561
04:45	44	114	26	61	70	175	16:45	215	855	372	1377	587 2232
05:00	60	23			83		17:00	205	480			685
05:15	53	27			80		17:15	238	480			718
05:30	103	43			146		17:30	249	460			709
05:45	134	350	69	162	203	512	17:45	256	948	449	1869	705 2817
06:00	124	61			185		18:00	216	460			676
06:15	164	68			232		18:15	198	417			615
06:30	226	117			343		18:30	249	403			652
06:45	319	833	177	423	496	1256	18:45	208	871	328	1608	536 2479
07:00	340	112			452		19:00	221	297			518
07:15	316	129			445		19:15	178	251			429
07:30	360	225			585		19:30	140	253			393
07:45	470	1486	255	721	725	2207	19:45	174	713	270	1071	444 1784
08:00	426	131			557		20:00	199	211			410
08:15	391	151			542		20:15	234	176			410
08:30	320	160			480		20:30	160	210			370
08:45	308	1445	135	577	443	2022	20:45	131	724	146	743	277 1467
09:00	253	133			386		21:00	139	161			300
09:15	234	144			378		21:15	108	115			223
09:30	194	117			311		21:30	93	137			230
09:45	229	910	139	533	368	1443	21:45	90	430	141	554	231 984
10:00	166	157			323		22:00	69	129			198
10:15	208	126			334		22:15	65	89			154
10:30	185	143			328		22:30	45	99			144
10:45	185	744	160	586	345	1330	22:45	33	212	52	369	85 581
11:00	189	189			378		23:00	29	58			87
11:15	191	174			365		23:15	38	40			78
11:30	216	217			433		23:30	26	46			72
11:45	229	825	194	774	423	1599	23:45	23	116	21	165	44 281
TOTALS	6840	4092			10932		TOTALS	8550	11890			20440
SPLIT %	62.6%	37.4%			34.8%		SPLIT %	41.8%	58.2%			65.2%

DAILY TOTALS					NB	SB	EB		WB		Total
					15,390	15,982	0		0		31,372

DAILY TOTALS					NB	SB	EB	WB	Total
					15,390	15,982	0	0	31,372
AM Peak Hour	07:30	11:45		07:30	PM Peak Hour	12:30	17:00		17:00
AM Pk Volume	1647	884		2409	PM Pk Volume	1055	1869		2817
Pk Hr Factor	0.876	0.948		0.831	Pk Hr Factor	0.909	0.973		0.981
7 - 9 Volume	2931	1298		4229	4 - 6 Volume	1803	3246		5049
7 - 9 Peak Hour	07:30	07:30		07:30	4 - 6 Peak Hour	17:00	17:00		17:00
7 - 9 Pk Volume	1647	762		2409	4 - 6 Pk Volume	948	1869		2817
Pk Hr Factor	0.876	0.747		0.831	Pk Hr Factor	0.926	0.973		0.981

VOLUME

El Toro Rd S/o SR-241

Day: Tuesday
Date: 5/24/2011City: Silverado
Project #: CA11_1070_010

DAILY TOTALS					NB	SB	EB		WB		Total	
					7,563	7,029	0		0		14,592	
AM Period	NB	SB	EB	WB	TOTAL		PM Period	NB	SB	EB	WB	TOTAL
00:00	11	4			15		12:00	84	73			157
00:15	8	6			14		12:15	83	83			166
00:30	17	8			25		12:30	120	89			209
00:45	6	42	3	21	9	63	12:45	110	397	66	311	176 708
01:00	7	3			10		13:00	98	91			189
01:15	1	3			4		13:15	103	85			188
01:30	9	2			11		13:30	93	74			167
01:45	2	19	4	12	6	31	13:45	107	401	67	317	174 718
02:00	3	2			5		14:00	105	84			189
02:15	1	6			7		14:15	139	105			244
02:30	3	0			3		14:30	100	111			211
02:45	3	10	4	12	7	22	14:45	130	474	141	441	271 915
03:00	0	1			1		15:00	156	121			277
03:15	0	1			1		15:15	243	111			354
03:30	1	2			3		15:30	184	107			291
03:45	2	3	5	9	7	12	15:45	143	726	110	449	253 1175
04:00	6	9			15		16:00	159	134			293
04:15	2	13			15		16:15	163	102			265
04:30	2	14			16		16:30	170	111			281
04:45	8	18	29	65	37	83	16:45	177	669	137	484	314 1153
05:00	8	21			29		17:00	170	126			296
05:15	12	20			32		17:15	199	148			347
05:30	15	40			55		17:30	222	136			358
05:45	20	55	43	124	63	179	17:45	175	766	130	540	305 1306
06:00	28	50			78		18:00	177	135			312
06:15	37	80			117		18:15	167	151			318
06:30	54	157			211		18:30	175	107			282
06:45	72	191	182	469	254	660	18:45	152	671	102	495	254 1166
07:00	83	123			206		19:00	130	103			233
07:15	89	165			254		19:15	128	78			206
07:30	109	262			371		19:30	125	58			183
07:45	125	406	257	807	382	1213	19:45	104	487	66	305	170 792
08:00	100	185			285		20:00	127	76			203
08:15	94	155			249		20:15	128	70			198
08:30	90	98			188		20:30	95	88			183
08:45	86	370	115	553	201	923	20:45	96	446	69	303	165 749
09:00	72	105			177		21:00	93	61			154
09:15	66	97			163		21:15	89	42			131
09:30	48	92			140		21:30	77	39			116
09:45	60	246	87	381	147	627	21:45	64	323	39	181	103 504
10:00	64	75			139		22:00	49	37			86
10:15	61	62			123		22:15	51	21			72
10:30	75	71			146		22:30	48	16			64
10:45	60	260	73	281	133	541	22:45	23	171	17	91	40 262
11:00	69	76			145		23:00	25	17			42
11:15	76	73			149		23:15	34	13			47
11:30	76	85			161		23:30	19	10			29
11:45	87	308	93	327	180	635	23:45	26	104	11	51	37 155
TOTALS	1928	3061			4989		TOTALS	5635	3968			9603
SPLIT %	38.6%	61.4%			34.2%		SPLIT %	58.7%	41.3%			65.8%

DAILY TOTALS					NB	SB	EB	WB	Total
					7,563	7,029	0	0	14,592
AM Peak Hour	07:30	07:15		07:15	PM Peak Hour	17:15	17:30		17:15
AM Pk Volume	428	869		1292	PM Pk Volume	773	552		1322
Pk Hr Factor	0.856	0.829		0.846	Pk Hr Factor	0.870	0.914		0.923
7 - 9 Volume	776	1360		2136	4 - 6 Volume	1435	1024		2459
7 - 9 Peak Hour	07:30	07:15		07:15	4 - 6 Peak Hour	16:45	16:45		16:45
7 - 9 Pk Volume	428	869		1292	4 - 6 Pk Volume	768	547		1315
Pk Hr Factor	0.856	0.829		0.846	Pk Hr Factor	0.865	0.924		0.918

Appendix B

Approved Scope of Work

Bob Kahn

From: Persaud, Harry [Harry.Persaud@ocpw.ocgov.com]
Sent: Monday, June 27, 2011 8:17 AM
To: Bob Kahn
Cc: Alonso Rice, Isaac; Bazmi, Khalid
Subject: RE: Saddle Crest Revised TIS Scope of Work

Good Morning Bob
SOW for subject TS is approved.

Have a pleasant day

Harry Persaud AICP, PMP
Manager
Planned Communities/Planning/OC Public Works
County of Orange, CA
714-834-2694

From: Bob Kahn [<mailto:rk@rkengineer.com>]
Sent: Monday, June 27, 2011 7:14 AM
To: Bob Kahn; Persaud, Harry
Cc: meadie@rutterdevelopment.com; perimuretta@cox.net; Bryan Estrada
Subject: RE: Saddle Crest Revised TIS Scope of Work

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Can you send me an email approving the Scope of Work for the Traffic Impact Study?

Thanks,

Robert Kahn PE
Principal



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Newport Beach, CA 92660
tel. 949.474.0809
cell 949.293-9639
fax 949.474.0902
www.rkengineer.com

From: Bob Kahn
Sent: Monday, June 13, 2011 1:20 PM
To: 'Persaud, Harry'
Cc: 'meadie@rutterdevelopment.com'; 'perimuretta@cox.net'; Bryan Estrada
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From: Bob Kahn

Sent: Tuesday, June 07, 2011 3:06 PM

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Harry,

Attached is our revised scope of work dated June 7, 2011. I have incorporated your comments including adding the additional intersection of Santiago Canyon Road at Modjeska Grade Road, and adding a detailed discussion of why the previous Santiago Canyon Road segment analysis is not appropriate in comparison to a V/C ratio evaluation. It will also discuss the project's compliance with the County's Santiago Canyon Road LOS standards.

RK will include an Interim Year analysis (Year 2016) based upon existing traffic volumes, a growth rate and cumulative projects expected by Year 2016 from the County, City of Lake Forest, City of Mission Viejo and City of Orange plus the project.

I would respectfully request that you approve the Scope of Work so that we can proceed with are analysis.

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Saddle Crest Traffic Impact Study (TIS) Scope of Work

Introduction

The purpose of this document is to identify the precise scope of work for the Saddle Crest Project Traffic Impact Study (TIS). The scope of work will be based upon the requirements of the GMP (Growth Management Program) Transportation Implementation Manual (TIM). It will include an evaluation of existing, near Interim Year (Project Buildout Year 2016), and long term (Year 2035) traffic impacts associated with the project. Appropriate mitigation measures and fair-share analysis will be included as part of the traffic impact study.

The proposed project would consist of 65 single-family, detached, residential dwelling units served by a single full service access to Santiago Canyon Road. The location of the project is shown in Exhibit A and the proposed site plan/vesting Tentative Tract Map is included in Exhibit B. The TIS will address project specific and cumulative traffic impacts in the study area. Study area intersections are shown in Exhibit A and were determined based upon the requirements of the Transportation Implementation Manual. Other non-signalized intersections and minor signalized intersections within other jurisdictions were not included pursuant to the TIM requirements.

The following is an outline of the proposed scope of work:

- I. Introduction - The introduction of the TIS will describe the historical background conditions of the project, a project description of the proposed development, location, intensity of development, and a brief discussion of what items will be included in the traffic impact study.
- II. Traffic Impact Study Methodology – This section of the traffic impact study will discuss the methodologies to be employed for the traffic impact study. This will include ICU (Intersection Capacity Utilization) Methodology for signalized intersections, HCM (Highway Capacity Manual) for unsignalized intersections and volume/capacity analysis for roadway segments for both average daily traffic (ADT) and peak hour directional flow. The County's level of service policy (LOS = "C") will be utilized for roadway segment analysis for Santiago Canyon Road and LOS = "D" for all intersections. This section of the report will also describe significance threshold pursuant to County policy requirements and will discuss any intersections on the County's Deficient Intersection List.

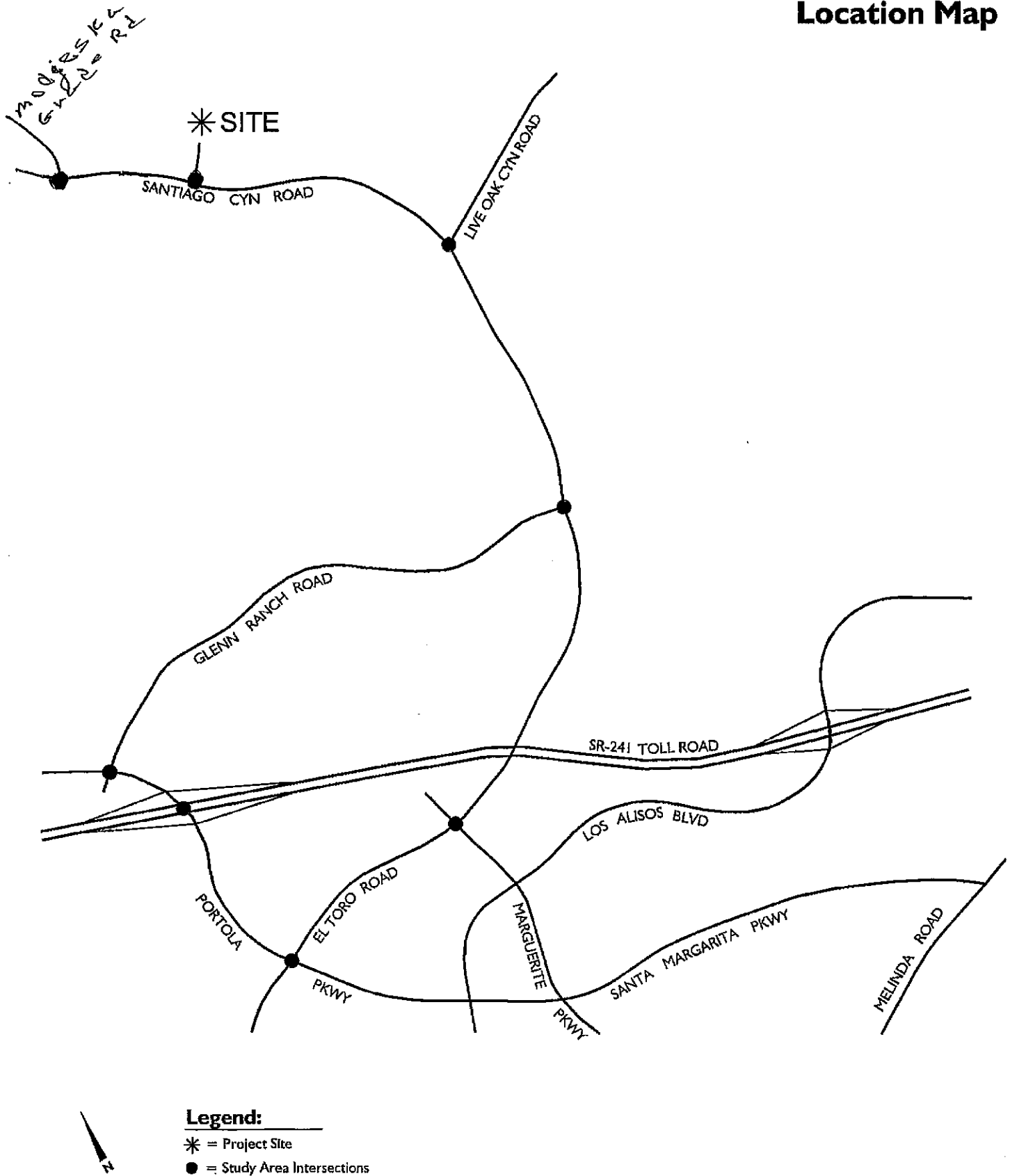
An explanation of why the previous TIM HCM segment analysis for Santiago Canyon Road is not appropriate. This will also be supported with travel time runs for existing conditions for Santiago Canyon Road from Live Oak Canyon Road to Modjeska Grade Road that will be provided.

- III. The Site Plan/Vesting Tentative Tract Map will be reviewed from a Traffic Circulation Standpoint – This section will review the project access and internal circulation for the project.
- IV. A field review of existing conditions of study area including intersections/roadway segments, lane configurations, and traffic controls will be discussed in this section of the report.
- V. Existing AM/PM peak hour traffic counts at the study area intersections will be obtained. Also 24-hour traffic counts on Santiago Canyon Road and El Toro Road will be obtained at the locations included in Exhibit A plus the intersection of Santiago Canyon Road at Modjeska Grade Road. Existing traffic counts (2011) at study area intersections and roadway segments are included in Exhibit F. These were obtained when school was in session. Additionally, the potential impacts of any special events (i.e. weddings and other special uses) along Santiago Canyon Road will be reviewed with respect to impacts upon intersection and roadway segment volumes.
- VI. Existing levels of service at study area intersections and roadway segments will be determined. A volume/capacity ratio analysis for Santiago Canyon Roadway segments will be calculated to determine levels of service.
- VII. The project's trip generation, trip distribution, and traffic assignment to the adjoining roadway system will be determined. Preliminary project trip generation rates are included in Table 3-1 and project trip generation is included in Table 3-2. The project trip distribution is included in Exhibit G.
- VIII. Existing Plus Project Traffic Impacts and Level of Service at Study Area Intersections and Roadway Segments along Santiago Canyon Road will be determined. Any required traffic improvements will be identified.
- IX. The Interim Year (Year 2016) Traffic Impacts, and Level of Service Without and With the Project at the Study Area Intersections and Santiago Canyon Roadway segments will be determined and the potential improvements will be identified for both the without and with project scenarios. An ambient growth rate of 2% per year will be used along with cumulative projects identified by the County and adjacent cities.
- X. The traffic study will evaluate long term traffic impacts based upon the OCP 2035 traffic model data. Project traffic will be added to the modeling data as a conservative assessment of future conditions. A consistent finding with respect to the long-term traffic modeling will be confirmed with OCTA to ensure that the Foothill Trabuco Specific Plan Land uses have been accommodated based upon the socioeconomic data.

- XI. The long term impacts without and with the project will be determined based upon the OCP 2035 traffic model data. Project traffic will be added to the modeling data as a conservative assessment of future conditions. Any long term improvements without and with the project will be determined as part of this analysis.
- XII. Traffic Mitigation Measures (i.e. traffic signals, additional traffic lanes, etc.) that may be required to accommodate the project will be identified. A preliminary cost for improvements will be identified.
- XIII. A fair-share traffic contribution of the project for both near term and long term conditions with the project will be presented based upon the County methodology.
- XIV. Various road fee programs that are applicable to the project will be discussed in this section of the report. Any of the improvements required that are part of any existing applicable road fee program will be identified.
- XV. Project Recommendations will be summarized in both graphic and tabular format.
- XVI. The results of the TIS will be summarized in a draft traffic impact report.
- XVII. The draft report will be submitted to the County for review.
- XVIII. The TIS will be revised pursuant to the County comments.

Exhibits

Exhibit A
Location Map





Existing Peak Hour Intersection Volumes and Average Daily Traffic (ADT)

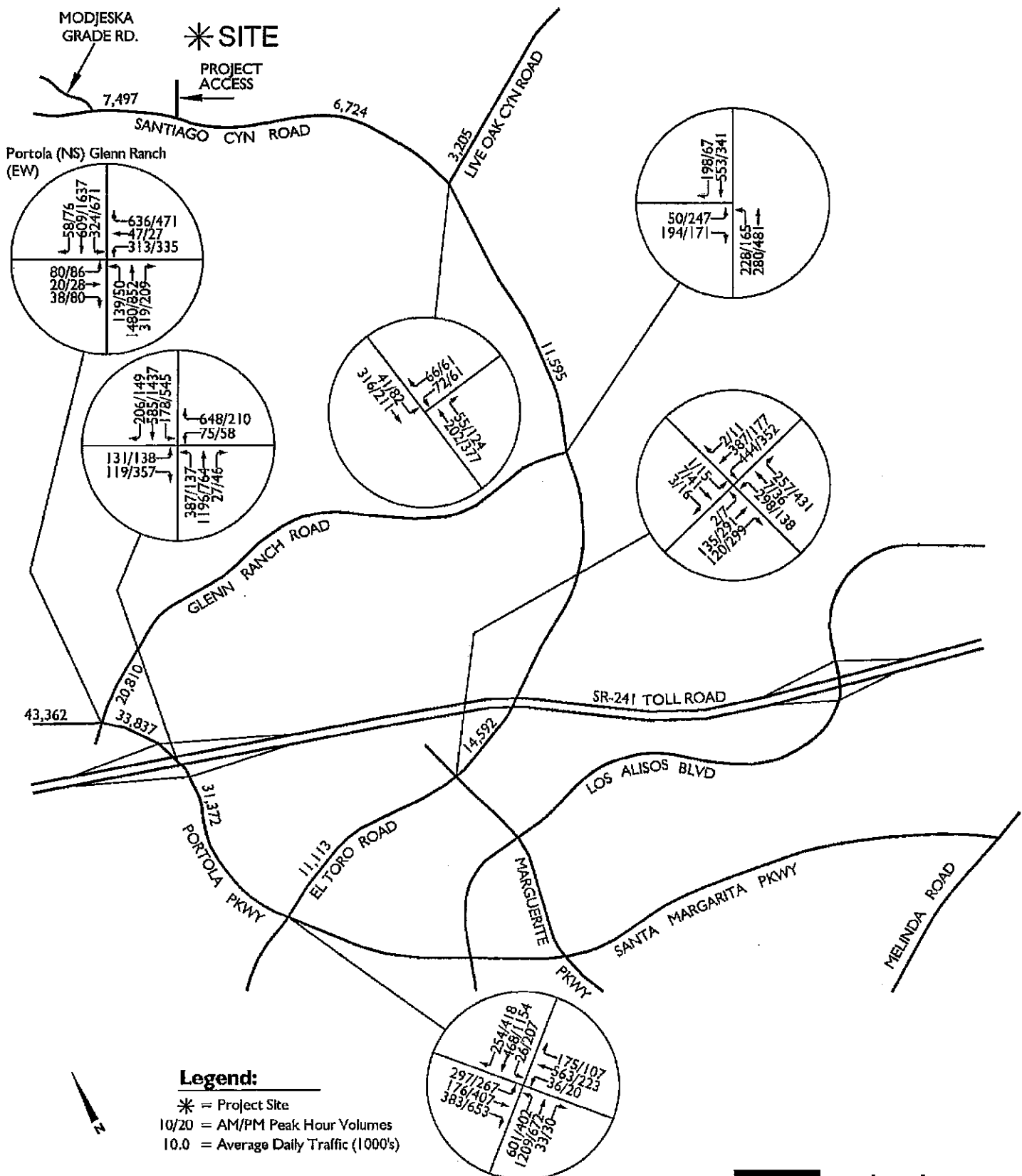
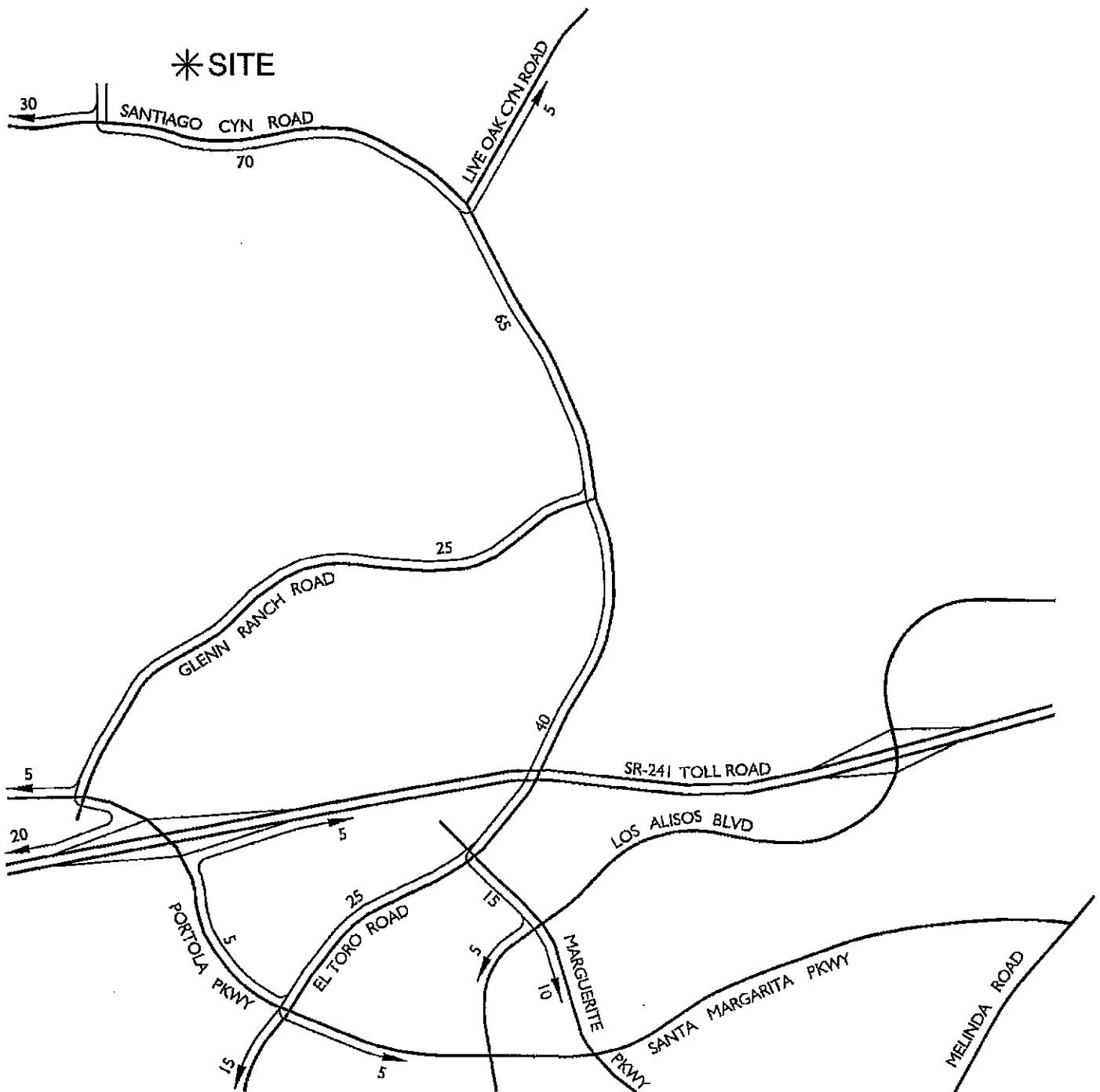


Exhibit G
Project Trip Distribution



Legend:

- * = Project Site
- 10 = Percent to/from Project

Tables

TABLE 3-1
Trip Generation Rates¹

Land Use	Quantity	Units ²	Peak Hour						Daily
			AM			PM			
			In	Out	Total	In	Out	Total	
Single-Family Detached Housing	65	DU	0.24	0.65	0.89	0.76	0.44	1.20	12.00

¹ Source: The daily trip generation is based on the single family detached rate from the County of Orange Trip Generation Rate Summary (Daily Vehicle Trip Generation Rates, August 1982). The peak hour trip generation rates were taken from the Foothill/Trabuco Specific Plan Traffic Analysis (Austin-Foust Associates, Inc. July 1991).

² DU = Dwelling Units

TABLE 3-2
Trip Generation

Land Use	Quantity	Units ¹	Peak Hour						Daily
			AM			PM			
			In	Out	Total	In	Out	Total	
Single-Family Detached Housing	65	DU	16	42	58	49	29	78	780

¹ TSF = Thousand Square Feet
RM = Rooms

Bob Kahn

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Cc: Alonso Rice, Isaac; Bazmi, Khalid
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Appendix C

Existing Conditions
Intersection Analysis Worksheets

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 PORTOLA PKWY (NS) @ GLENN RANCH RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.550

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 26 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	3	0	1		2	0	3	0	1	

Volume Module:

Base Vol:	139	1480	319	324	609	58	80	20	38	313	47	636
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	139	1480	319	324	609	58	80	20	38	313	47	636
User Adj:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	139	1480	271	324	609	49	80	20	38	313	47	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	139	1480	271	324	609	49	80	20	38	313	47	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	139	1480	271	324	609	49	80	20	38	313	47	0
OvlAdjVol:			115									

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	1.00	1.00	2.00	2.00	1.00
Final Sat.:	3400	5100	1700	3400	5100	1700	1700	1700	1700	3400	3400	1700

Capacity Analysis Module:

Vol/Sat:	0.04	0.29	0.16	0.10	0.12	0.03	0.05	0.01	0.02	0.09	0.01	0.00
OvlAdjV/S:			0.07									
Crit Moves:	****			****						****	****	

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 PORTOLA PKWY (NS) @ GLENN RANCH RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.560

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 27 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	3	0	1	2	0	3	0	1	1	0
	2	0	3	0	1	2	0	3	0	1	2	0

Volume Module:

Base Vol:	50	852	209	671	1637	76	86	28	80	335	27	471
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	852	209	671	1637	76	86	28	80	335	27	471
User Adj:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	50	852	178	671	1637	65	86	28	80	335	27	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	852	178	671	1637	65	86	28	80	335	27	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Volume:	50	852	178	671	1637	65	86	28	80	335	27	0
OvlAdjVol:	10											

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	1.00	1.00	2.00	2.00	1.00
Final Sat.:	3400	5100	1700	3400	5100	1700	1700	1700	1700	3400	3400	1700

Capacity Analysis Module:

Vol/Sat:	0.01	0.17	0.10	0.20	0.32	0.04	0.05	0.02	0.05	0.10	0.01	0.00
OvlAdjV/S:	0.01											
Crit Moves:	****			****			****			****		

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #2 PORTOLA PKWY (NS) @ SR-S41 RAMPS (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.413

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 20 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound					
Movement:	L	T	R	L	T	R	L	T	R	L	T	R			
Control:	Protected			Protected			Protected			Protected					
Rights:	Ignore			Ignore			Ignore			Ignore					
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0			
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Lanes:	2	0	3	0	1	2	0	2	0	1	1	0	0	0	1

Volume Module:

Base Vol:	387	1196	27	178	585	206	131	0	119	75	0	648
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	387	1196	27	178	585	206	131	0	119	75	0	648
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	387	1196	0	178	585	0	131	0	0	75	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	387	1196	0	178	585	0	131	0	0	75	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	387	1196	0	178	585	0	131	0	0	75	0	0

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Lanes:	2.00	3.00	1.00	2.00	2.00	1.00	1.00	0.00	1.00	2.00	0.00	1.00
Final Sat.:	3400	5100	1445	3400	3400	1445	1700	0	1445	3400	0	1445

Capacity Analysis Module:

Vol/Sat:	0.11	0.23	0.00	0.05	0.17	0.00	0.08	0.00	0.00	0.02	0.00	0.00
Crit Moves:	****			****			****			****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
*****
Intersection #2 PORTOLA PKWY (NS) @ SR-S41 RAMPS (EW)
*****
Cycle (sec):          100          Critical Vol./Cap. (X):          0.594
Loss Time (sec):      5          Average Delay (sec/veh):          xxxxxx
Optimal Cycle:        29          Level Of Service:          A
*****
Approach:      North Bound      South Bound      East Bound      West Bound
Movement:      L - T - R      L - T - R      L - T - R      L - T - R
-----|-----|-----|-----|
Control:      Protected      Protected      Protected      Protected
Rights:      Ignore      Ignore      Ignore      Ignore
Min. Green:      0 0 0      0 0 0      0 0 0      0 0 0
Y+R:      4.0 4.0 4.0      4.0 4.0 4.0      4.0 4.0 4.0      4.0 4.0 4.0
Lanes:      2 0 3 0 1      2 0 2 0 1      1 0 0 0 1      2 0 0 0 1
-----|-----|-----|-----|
Volume Module:
Base Vol:      137 764 46 545 1437 149 138 0 357 58 0 210
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 137 764 46 545 1437 149 138 0 357 58 0 210
User Adj: 1.00 1.00 0.00 1.00 1.00 0.00 1.00 1.00 0.00 1.00 1.00 0.00
PHF Adj: 1.00 1.00 0.00 1.00 1.00 0.00 1.00 1.00 0.00 1.00 1.00 0.00
PHF Volume: 137 764 0 545 1437 0 138 0 0 58 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 137 764 0 545 1437 0 138 0 0 58 0 0
PCE Adj: 1.00 1.00 0.00 1.00 1.00 0.00 1.00 1.00 0.00 1.00 1.00 0.00
MLF Adj: 1.00 1.00 0.00 1.00 1.00 0.00 1.00 1.00 0.00 1.00 1.00 0.00
FinalVolume: 137 764 0 545 1437 0 138 0 0 58 0 0
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85
Lanes: 2.00 3.00 1.00 2.00 2.00 1.00 1.00 0.00 1.00 2.00 0.00 1.00
Final Sat.: 3400 5100 1445 3400 3400 1445 1700 0 1445 3400 0 1445
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat: 0.04 0.15 0.00 0.16 0.42 0.00 0.08 0.00 0.00 0.02 0.00 0.00
Crit Moves: ****          ****          ****          ****
*****

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Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #3 SANTIAGO CANYON RD (NS) @ MODJESKA GRADE RD (EW)

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: B[14.3]

Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign			
Rights:	Include			Include			Include			Include			
Lanes:	0	0	1	0	0	1	0	0	0	0	1	0	0

Volume Module:

Base Vol:	0	322	10	0	292	0	0	0	0	28	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	322	10	0	292	0	0	0	0	28	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	357	11	0	324	0	0	0	0	31	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	357	11	0	324	0	0	0	0	31	0	0

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	xxxxx

Capacity Module:

Cnflct Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	681	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	419	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	419	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.07	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	14.3	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	B	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			14.3		
ApproachLOS:	*			*			*			B		

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)
*****
Intersection #3 SANTIAGO CANYON RD (NS) @ MODJESKA GRADE RD (EW)
*****
Average Delay (sec/veh):      0.4      Worst Case Level Of Service: B[ 14.4]
*****
Approach:      North Bound      South Bound      East Bound      West Bound
Movement:      L - T - R      L - T - R      L - T - R      L - T - R
-----|-----|-----|-----|
Control:      Uncontrolled      Uncontrolled      Stop Sign      Stop Sign
Rights:      Include      Include      Include      Include
Lanes:      0 0 1 0 1      0 1 0 0 0      0 0 0 0 0      0 0 1 0 0
-----|-----|-----|-----|
Volume Module:
Base Vol:      0 376 38      2 326 0      0 0 0 0      16 0 2
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 0 376 38      2 326 0      0 0 0 0      16 0 2
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95
PHF Volume: 0 398 40      2 345 0      0 0 0 0      17 0 2
Reduct Vol: 0 0 0      0 0 0      0 0 0 0      0 0 0
FinalVolume: 0 398 40      2 345 0      0 0 0 0      17 0 2
-----|-----|-----|-----|
Critical Gap Module:
Critical Gp:xxxxx xxxxx xxxxx 4.1 xxxxx xxxxx xxxxx xxxxx xxxxx 6.4 6.5 6.2
FollowUpTim:xxxxx xxxxx xxxxx 2.2 xxxxx xxxxx xxxxx xxxxx xxxxx 3.5 4.0 3.3
-----|-----|-----|-----|
Capacity Module:
Cnflct Vol: xxxxx xxxxx xxxxx 438 xxxxx xxxxx xxxxx xxxxx xxxxx 747 747 398
Potent Cap.: xxxxx xxxxx xxxxx 1132 xxxxx xxxxx xxxxx xxxxx xxxxx 383 344 656
Move Cap.: xxxxx xxxxx xxxxx 1132 xxxxx xxxxx xxxxx xxxxx xxxxx 383 343 656
Volume/Cap: xxxxx xxxxx xxxxx 0.00 xxxxx xxxxx xxxxx xxxxx xxxxx 0.04 0.00 0.00
-----|-----|-----|-----|
Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxx 0.0 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Control Del:xxxxx xxxxx xxxxx 8.2 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
LOS by Move: * * * A * * * * * * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 401 xxxxx
SharedQueue:xxxxxx xxxxx xxxxx 0.0 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.1 xxxxx
Shrd ConDel:xxxxxx xxxxx xxxxx 8.2 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 14.4 xxxxx
Shared LOS: * * * A * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx xxxxxx 14.4
ApproachLOS: * * * B
*****
Note: Queue reported is the number of cars per lane.
*****

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)
*****
Intersection #5 SANTIAGO CANYON RD (NS) @ LIVE OAK CANYON RD (EW)
*****
Average Delay (sec/veh):      2.9      Worst Case Level Of Service: B[ 13.2]
*****
Approach:      North Bound      South Bound      East Bound      West Bound
Movement:      L - T - R      L - T - R      L - T - R      L - T - R
-----|-----|-----|-----|
Control:      Uncontrolled      Uncontrolled      Stop Sign      Stop Sign
Rights:      Include      Include      Include      Include
Lanes:      0 0 0 1 0      1 0 1 0 0      0 0 0 0 0      1 0 0 0 1
-----|-----|-----|-----|
Volume Module:
Base Vol:      0 202      55      41 316      0      0 0 0 0      72 0 66
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 0 202      55      41 316      0      0 0 0 0      72 0 66
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.91 0.91 0.91 0.91 0.91 0.91 0.91 0.91 0.91 0.91 0.91 0.91
PHF Volume: 0 222      61      45 348      0      0 0 0 0      79 0 73
Reduct Vol: 0 0      0      0 0      0      0 0 0 0      0 0 0
FinalVolume: 0 222      61      45 348      0      0 0 0 0      79 0 73
-----|-----|-----|-----|
Critical Gap Module:
Critical Gp:xxxxx xxxxx xxxxx      4.1 xxxxx xxxxx xxxxx xxxxx xxxxx      6.4 xxxxx 6.2
FollowUpTim:xxxxxx xxxxx xxxxx      2.2 xxxxx xxxxx xxxxx xxxxx xxxxx      3.5 xxxxx 3.3
-----|-----|-----|-----|
Capacity Module:
Cnflct Vol: xxxxx xxxxx xxxxx      283 xxxxx xxxxx xxxxx xxxxx xxxxx      691 xxxxx 253
Potent Cap.: xxxxx xxxxx xxxxx      1291 xxxxx xxxxx xxxxx xxxxx xxxxx      413 xxxxx 791
Move Cap.: xxxxx xxxxx xxxxx      1291 xxxxx xxxxx xxxxx xxxxx xxxxx      402 xxxxx 791
Volume/Cap: xxxxx xxxxx xxxxx      0.03 xxxxx xxxxx xxxxx xxxxx xxxxx      0.20 xxxxx 0.09
-----|-----|-----|-----|
Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxx      0.1 xxxxx xxxxx xxxxx xxxxx xxxxx      0.7 xxxxx 0.3
Control Del:xxxxxx xxxxx xxxxx      7.9 xxxxx xxxxx xxxxx xxxxx xxxxx      16.1 xxxxx 10.0
LOS by Move: * * *      A * * *      * * * *      C * * B
Movement: LT - LTR - RT      LT - LTR - RT      LT - LTR - RT      LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
SharedQueue:xxxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shrd ConDel:xxxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shared LOS: * * *      * * * *      * * * *      * * * *
ApproachDel: xxxxxxx      xxxxxxx      xxxxxxx      13.2
ApproachLOS: *      *      *      B
*****
Note: Queue reported is the number of cars per lane.
*****

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Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

 Intersection #5 SANTIAGO CANYON RD (NS) @ LIVE OAK CANYON RD (EW)

Average Delay (sec/veh): 2.8 Worst Case Level Of Service: C[15.2]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	1	0	0	1	0	0	0	0	0	1

Volume Module:

Base Vol:	0	377	124	82	211	0	0	0	0	61	0	61
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	377	124	82	211	0	0	0	0	61	0	61
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	0	385	127	84	216	0	0	0	0	62	0	62
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	385	127	84	216	0	0	0	0	62	0	62

Critical Gap Module:

Critical Gp:xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3

Capacity Module:

Cnflict Vol:	xxxx	xxxx	xxxxx	512	xxxx	xxxxx	xxxx	xxxx	xxxxx	831	xxxx	448
Potent Cap.:	xxxx	xxxx	xxxxx	1064	xxxx	xxxxx	xxxx	xxxx	xxxxx	342	xxxx	615
Move Cap.:	xxxx	xxxx	xxxxx	1064	xxxx	xxxxx	xxxx	xxxx	xxxxx	321	xxxx	615
Volume/Cap:	xxxx	xxxx	xxxx	0.08	xxxx	xxxx	xxxx	xxxx	xxxx	0.19	xxxx	0.10

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	0.3	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.7	xxxx	0.3
Control Del:xxxxx	xxxx	xxxx	xxxxx	8.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	18.9	xxxx	11.5
LOS by Move:	*	*	*	A	*	*	*	*	*	C	*	B
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:xxxxx	xxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:xxxxx	xxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			15.2		
ApproachLOS:	*			*			*			C		

 Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #6 EL TORO RD (NS) @ GLENN RANCH RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.502

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 24 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R

Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	1	1	0	1	0	0	0

Volume Module:

Base Vol:	228	280	0	0	553	198	50	0	194	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	228	280	0	0	553	198	50	0	194	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	228	280	0	0	553	198	50	0	165	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	228	280	0	0	553	198	50	0	165	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	228	280	0	0	553	198	50	0	165	0	0	0

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	0.00	1.47	0.53	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1700	1700	0	0	2504	896	1700	0	1700	0	0	0

Capacity Analysis Module:

Vol/Sat:	0.13	0.16	0.00	0.00	0.22	0.22	0.03	0.00	0.10	0.00	0.00	0.00
Crit Moves:	****				****				****			

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #6 EL TORO RD (NS) @ GLENN RANCH RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.478

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 29 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	1	1	0	1	0	0	0

Volume Module:

Base Vol:	165	481	0	0	341	67	247	0	171	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	165	481	0	0	341	67	247	0	171	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	165	481	0	0	341	67	247	0	145	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	165	481	0	0	341	67	247	0	145	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	165	481	0	0	341	67	247	0	145	0	0	0

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	0.00	1.67	0.33	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1700	1700	0	0	2842	558	1700	0	1700	0	0	0

Capacity Analysis Module:

Vol/Sat:	0.10	0.28	0.00	0.00	0.12	0.12	0.15	0.00	0.09	0.00	0.00	0.00
Crit Moves:	****			****			****			****		

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #7 MARGUERITE PKWY (NS) @ EL TORO RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.330

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 18 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	1	1	0	1	1	1	2	0	2	0	1
	2	0	1	1	0	1	1	2	0	1	1	0

Volume Module:

Base Vol:	298	7	257	1	7	3	2	135	120	444	387	2
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	298	7	257	1	7	3	2	135	120	444	387	2
User Adj:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	298	7	218	1	7	3	2	135	102	444	387	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	298	7	218	1	7	3	2	135	102	444	387	2
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	298	7	218	1	7	3	2	135	102	444	387	2
OvlAdjVol:	0											

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	1.99	0.01
Final Sat.:	3400	1700	1700	1700	3400	1700	3400	3400	1700	3400	3383	17

Capacity Analysis Module:

Vol/Sat:	0.09	0.00	0.13	0.00	0.00	0.00	0.00	0.04	0.06	0.13	0.11	0.11
OvlAdjV/S:	0.00											
Crit Moves:	****				****				****	****		

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #7 MARGUERITE PKWY (NS) @ EL TORO RD (EW)

Cycle (sec): 100 Critical Vol./Cap. (X): 0.427

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 21 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	1	1	0	1	1	1	2	0	2	0	1
	2	0	1	1	0					2	0	1

Volume Module:

Base Vol:	138	36	431	15	41	16	7	291	299	352	177	11
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	138	36	431	15	41	16	7	291	299	352	177	11
User Adj:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	138	36	366	15	41	14	7	291	254	352	177	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	138	36	366	15	41	14	7	291	254	352	177	11
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	138	36	366	15	41	14	7	291	254	352	177	11
OvlAdjVol:			190									

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	1.88	0.12
Final Sat.:	3400	1700	1700	1700	3400	1700	3400	3400	1700	3400	3201	199

Capacity Analysis Module:

Vol/Sat:	0.04	0.02	0.22	0.01	0.01	0.01	0.00	0.09	0.15	0.10	0.06	0.06
OvlAdjV/S:			0.11									
Crit Moves:			****			****			****		****	

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #8 PORTOLA/SANTA MARGARITA PKWY (NS) & EL TORO RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.639

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 32 Level Of Service: B

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

-----|-----|-----|-----|

Control: Protected Protected Protected Protected

Rights: Include Include Ignore Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 2 0 4 0 1 2 0 3 0 1 1 0 3 0 1

-----|-----|-----|-----|

Volume Module:

Base Vol: 601 1209 33 26 468 254 297 176 383 36 563 175

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 601 1209 33 26 468 254 297 176 383 36 563 175

User Adj: 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.00 1.00 1.00 0.85

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00

PHF Volume: 601 1209 28 26 468 216 297 176 0 36 563 149

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 601 1209 28 26 468 216 297 176 0 36 563 149

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00

FinalVolume: 601 1209 28 26 468 216 297 176 0 36 563 149

-----|-----|-----|-----|

Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Lanes: 2.00 4.00 1.00 2.00 3.00 1.00 1.00 3.00 1.00 1.00 3.00 1.00

Final Sat.: 3400 6800 1700 3400 5100 1700 1700 5100 1700 1700 5100 1700

-----|-----|-----|-----|

Capacity Analysis Module:

Vol/Sat: 0.18 0.18 0.02 0.01 0.09 0.13 0.17 0.03 0.00 0.02 0.11 0.09

Crit Moves: **** **** ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #8 PORTOLA/SANTA MARGARITA PKWY (NS) & EL TORO RD (EW)

Cycle (sec): 100 Critical Vol./Cap. (X): 0.605

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 29 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	4	0	1		2	0	3	0	1	

Volume Module:

Base Vol:	402	672	30	207	1154	418	267	407	653	20	223	107
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	402	672	30	207	1154	418	267	407	653	20	223	107
User Adj:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.00	1.00	1.00	0.85
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	402	672	26	207	1154	355	267	407	0	20	223	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	402	672	26	207	1154	355	267	407	0	20	223	91
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	402	672	26	207	1154	355	267	407	0	20	223	91

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	4.00	1.00	2.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3400	6800	1700	3400	5100	1700	1700	5100	1700	1700	5100	1700

Capacity Analysis Module:

Vol/Sat:	0.12	0.10	0.02	0.06	0.23	0.21	0.16	0.08	0.00	0.01	0.04	0.05
Crit Moves:	****			****			****					****

Appendix D

County of Orange Saddle Crest Traffic Impact Study
Traffic Forecast Data 2015 and Buildout

**County of Orange
Saddle Crest Traffic Impact Study
Traffic Forecast Data**

2015 and Buildout

Prepared by:

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(714) 667-0496**

August 4, 2011

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DEMOGRAPHIC DATA

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Figure 4: ADT Volumes (000s) (South of Live Oak Canyon)

Peak Hour Intersection Volumes

DEMOGRAPHIC DATA

The traffic forecast volumes are based on various sources including a previous analysis carried out for Santiago Canyon Road (County of Orange Transportation Implementation Manual, Santiago Canyon Road Analysis, Austin-Foust Associates, Inc., April 2009), the current Orange County Transportation Analysis Model (OCTAM), which reflects OCP-2006 demographic projections, and the Lake Forest Traffic Analysis Model (LFTAM), which includes the Vacant Land Opportunities Study Area development as well as the recently approved Lake Forest Sports Park at Glass Creek. The East Orange approved development and buildout of the Foothill/Trabuco Specific Plan (including the project site) are also assumed in the forecasts. Table 1 summarizes demographic data projections for areas contributing to traffic on Santiago Canyon Road. The overall population growth is 45 percent and the growth in employment is 35 percent. In combination, this would indicate a growth of traffic from these CAAs of around 44 percent which is reflected in the traffic forecasts.

Table 1

OCP-2006 DEMOGRAPHIC PROJECTIONS

Select CAAs*		2005	2010	2015	2020	2025	2030	2035
POPULATION								
RSA C-43	CAA 55	1,775	1,823	1,823	1,845	1,852	1,862	1,862
	CAA 70	26,317	27,228	28,434	29,399	29,773	30,003	30,035
	Total	28,092	29,051	30,257	31,244	31,625	31,865	31,897
	5 Year Growth		3.4%	4.2%	3.3%	1.2%	.8%	.1%
	Cum. Growth		3.4%	7.7%	11.2%	12.6%	13.4%	13.5%
RSA B-41	CAA 29	4,831	14,700	15,326	15,502	15,567	15,661	15,686
	5 Year Growth		204.3%	4.3%	1.1%	.4%	.6%	.2%
	Cum. Growth		204.3%	217.2%	220.9%	222.2%	224.2%	224.7%
COMBINED	TOTAL	32,923	43,751	45,583	46,746	47,192	47,526	47,583
	5 Year Growth		32.9%	4.2%	2.6%	1.0%	.7%	.1%
	Cum. Growth		32.9%	38.5%	42.0%	43.3%	44.4%	44.5%
EMPLOYMENT								
RSA C-43	CAA 55	153	159	162	165	165	165	165
	CAA 70	2,781	2,846	2,863	2,876	2,894	2,902	2,908
	Total	2,934	3,005	3,025	3,041	3,059	3,067	3,073
	5 Year Growth		2.4%	.7%	.5%	.6%	.3%	.2%
	Cum. Growth		2.4%	3.1%	3.6%	4.3%	4.5%	4.7%
RSA B-41	CAA 29	513	1,479	1,573	1,582	1,584	1,589	1,589
	5 Year Growth		188.3%	6.4%	.6%	.1%	.3%	0%
	Cum. Growth		188.3%	206.6%	208.4%	208.8%	209.7%	209.7%
COMBINED	TOTAL	3,447	4,484	4,598	4,623	4,643	4,656	4,662
	5 Year Growth		30.1%	2.5%	.5%	.4%	.3%	.1%
	Cum. Growth		30.1%	33.4%	34.1%	34.7%	35.1%	35.2%

* See CAAs in Figure 1.

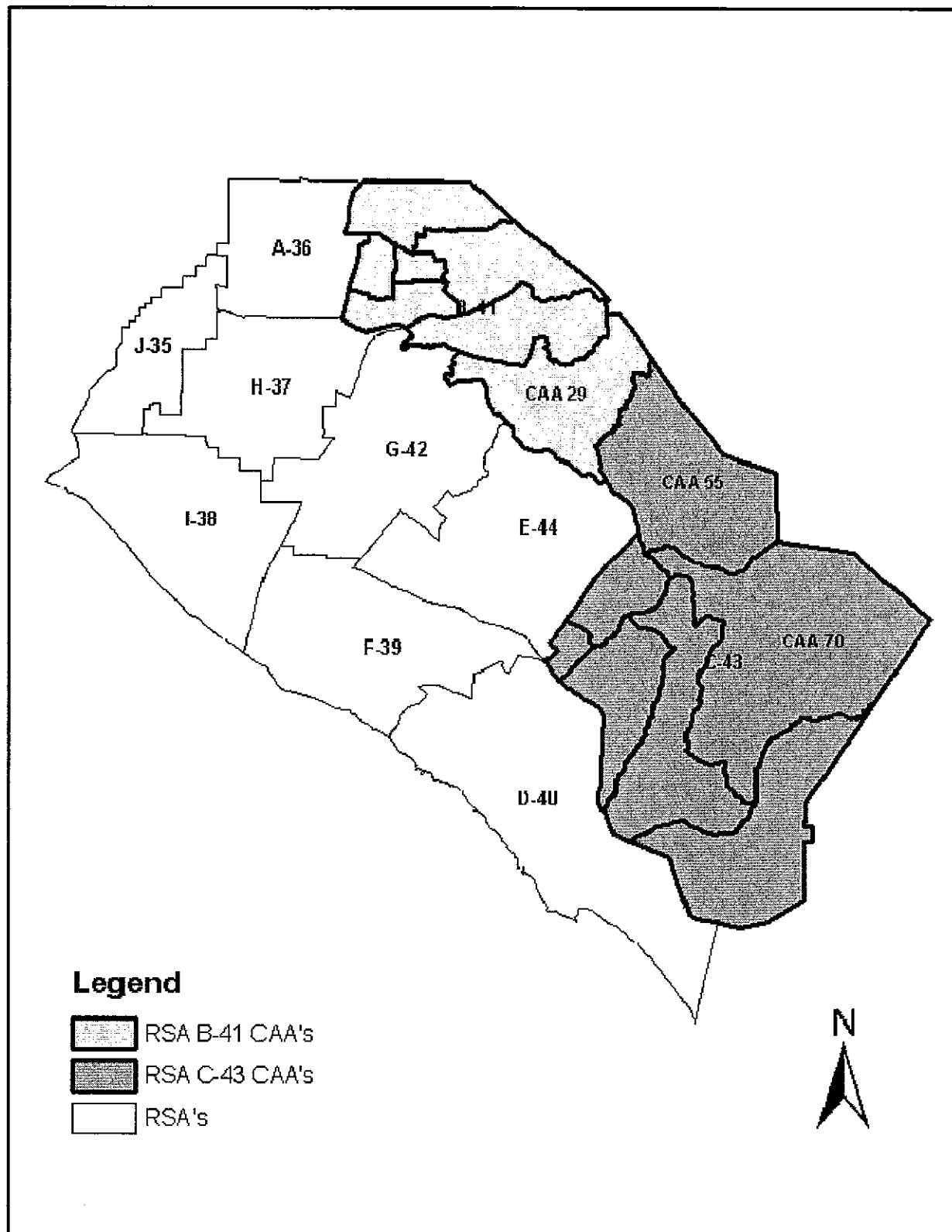


Figure 1
RSAs AND CAAs

TRAFFIC FORECAST DATA

As previously mentioned, the traffic forecast volumes are based on various sources including a previous analysis carried out for Santiago Canyon Road (County of Orange Transportation Implementation Manual, Santiago Canyon Road Analysis, Austin-Foust Associates, Inc., April 2009), the current OCTAM 3.3, and the LFTAM, which includes the Vacant Land Opportunities Study Area development as well as the recently approved Lake Forest Sports Park at Glass Creek. The East Orange approved development and buildout of the Foothill/Trabuco Specific Plan (including the project site) are also assumed in the forecasts. The OCTAM uses regional and countywide demographic data projections (i.e., OCP-2006) to produce traffic forecasts on the local and regional highway system. The LFTAM was developed according to the Orange County sub-area traffic modeling guidelines that have been adopted by the Orange County Transportation Authority (OCTA), and the OCTA has certified the traffic model as being consistent with the OCTAM regional model.

Forecast data that was presented for the south end section of Santiago Canyon Road in the previously mentioned analysis is expanded here to include volume data for 2011 existing counts, short-term (year 2015) and buildout according to OCP-2006 projections in OCTAM3.3. This data and the OCTAM were mainly used to arrive at the volumes on Santiago Canyon Road north of Live Oak Canyon Road, and the LFTAM was used for the remaining areas.

Figures 2 through 4 illustrate the volumes as mentioned above for the Saddle Crest study area for year 2015 and buildout timeframes. The peak hour intersection volumes are included in the summary that follows. The intersections of Santiago Canyon Road at Modjeska Grade Road and at the project access should be derived by the traffic consultant. Both intersections are not included in the traffic models used here.



YEAR	ADT (000s)	AM PEAK HOUR			PM PEAK HOUR		
		EB	WB	Total	EB	WB	Total
2007	6,000	340	290	630	280	440	720
2011	6,700	360	270	630	290	440	730
2015	6,800	370	280	650	300	450	750
2025	11,000	690	440	1,130	440	700	1,140
2035	11,110	700	440	1,140	440	710	1,150

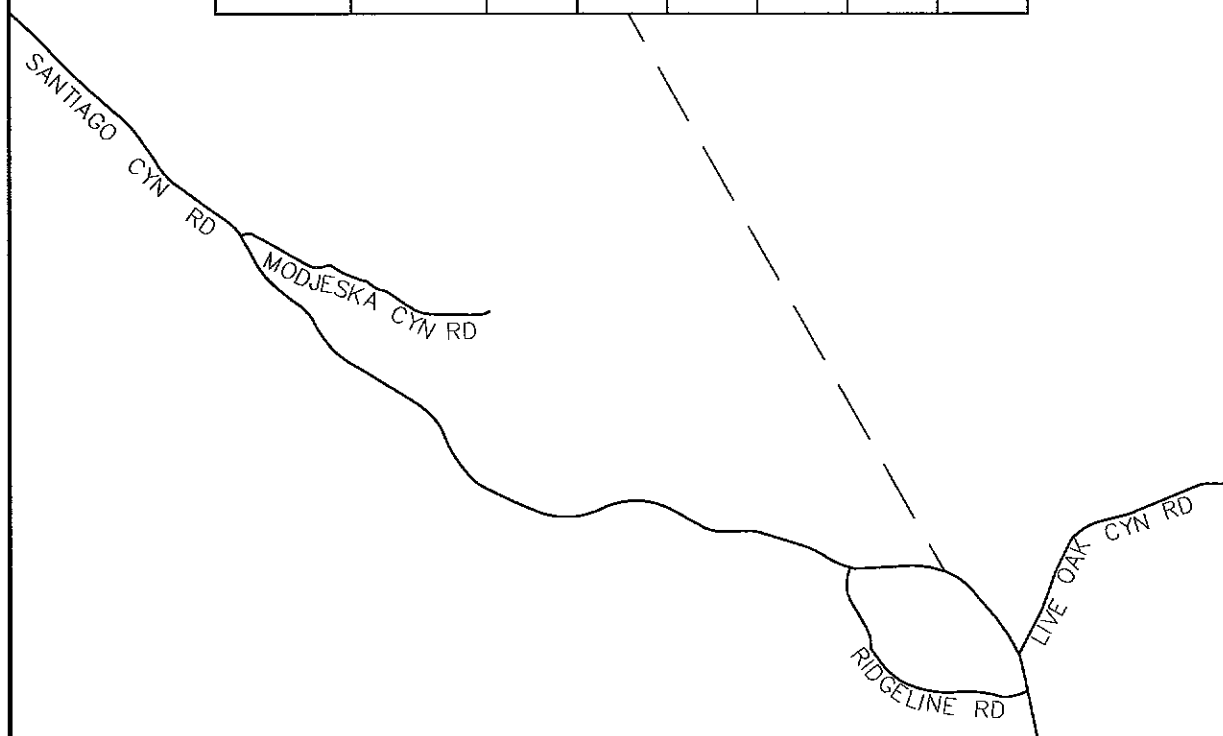


Figure 2

SANTIAGO CANYON ROAD TRAFFIC VOLUMES

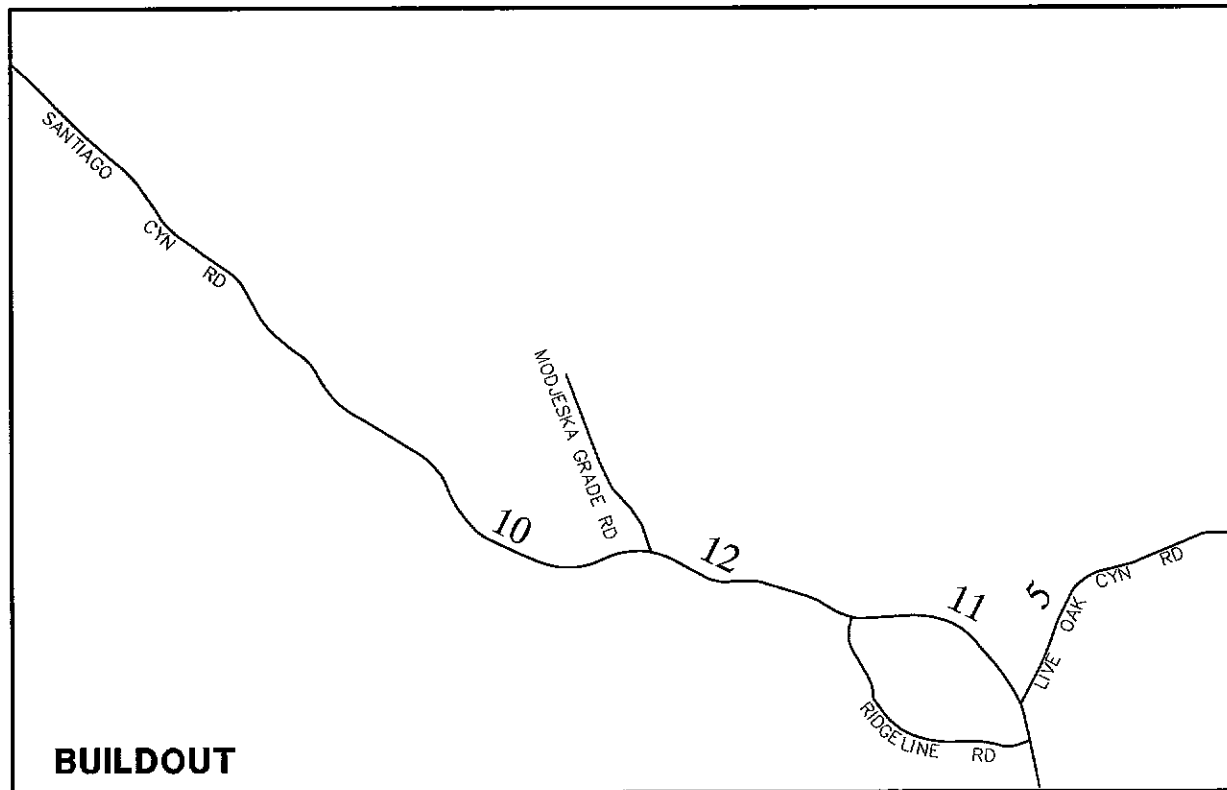
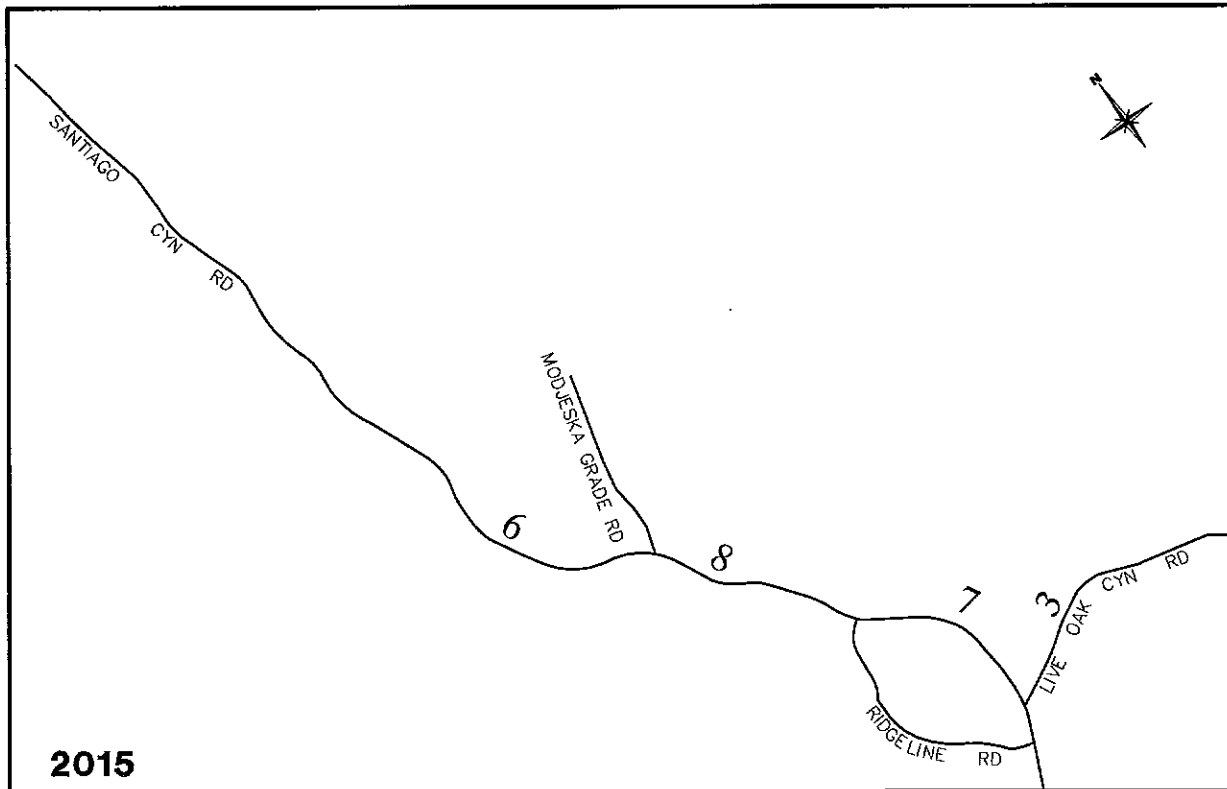


Figure 3
ADT VOLUMES (000s)
(NORTH OF LIVE OAK CANYON)

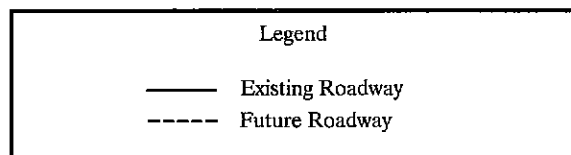
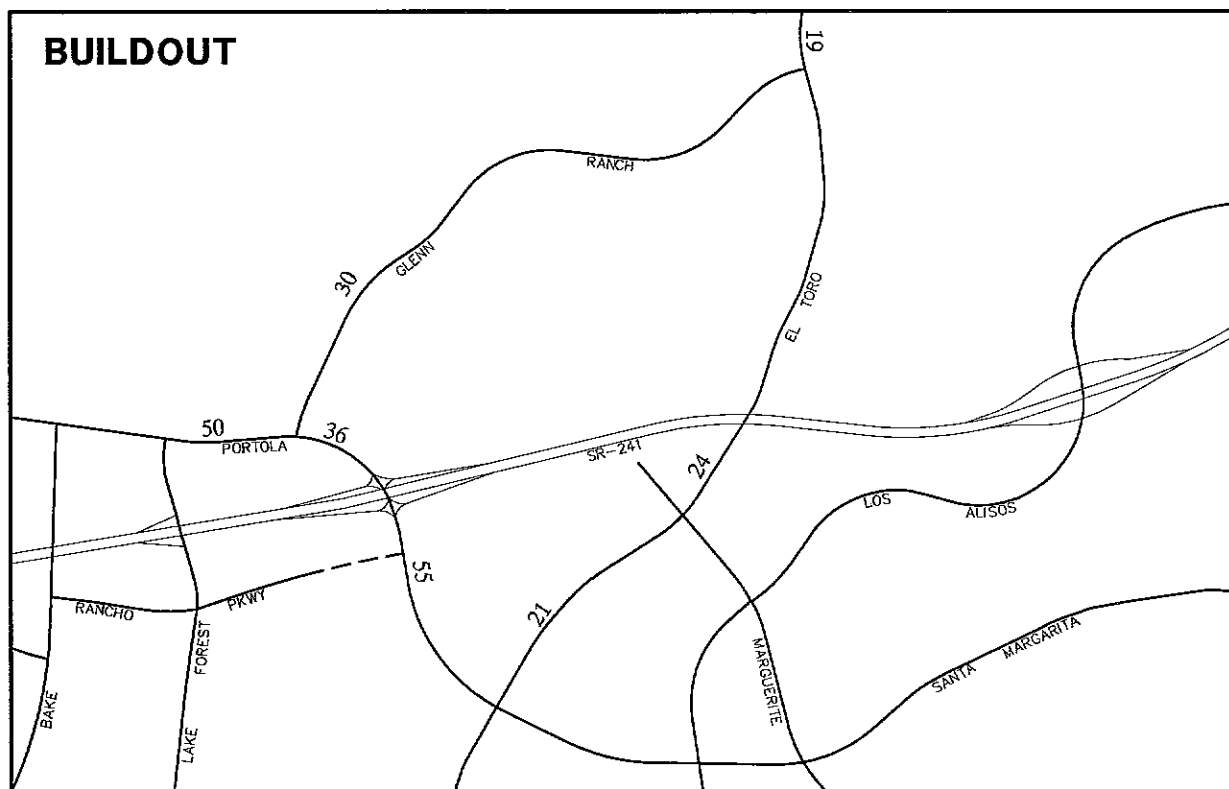
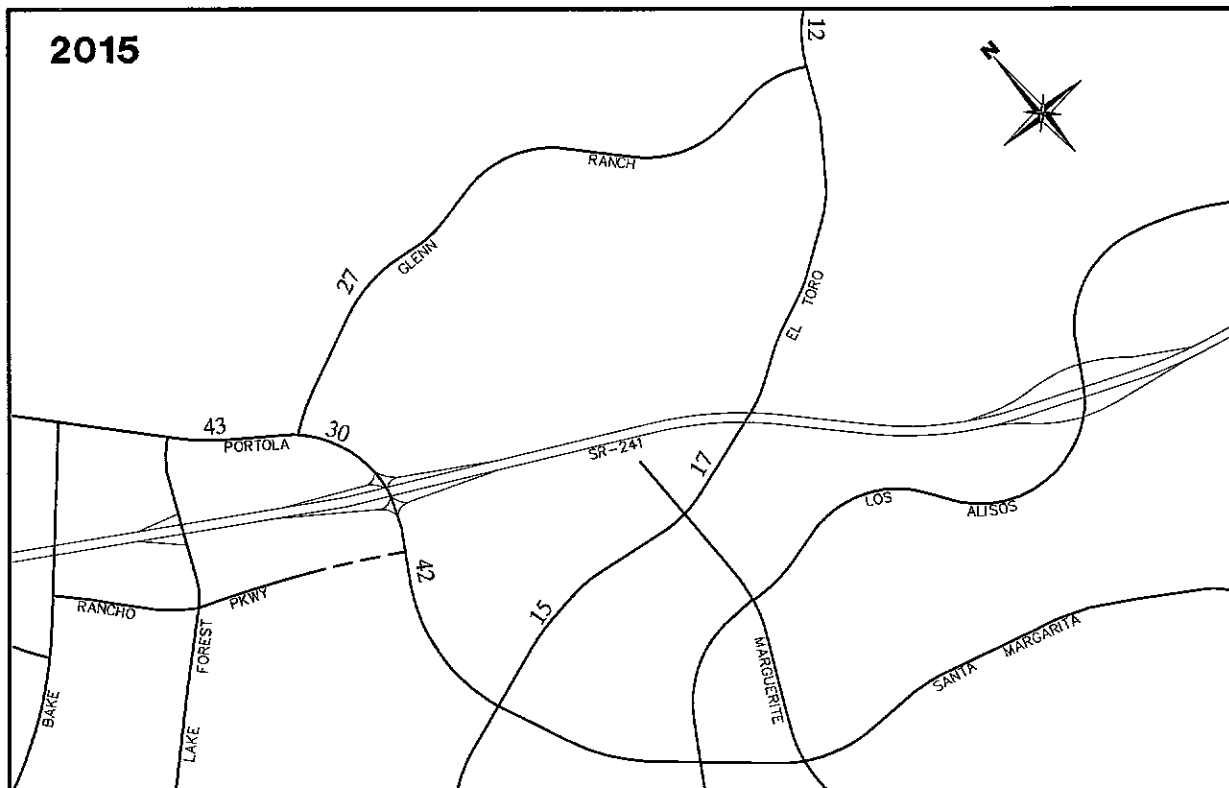


Figure 4

ADT VOLUMES (000s)
(SOUTH OF LIVE OAK CANYON)

Peak Hour Intersection Volumes

Intersection (N/S & E/W)	Southbound			Westbound			Northbound			Eastbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
4. Glenn Ranch & Portola												
2015 AM	450	50	930	100	1380	320	60	20	30	460	570	40
2015 PM	350	20	690	60	760	360	100	20	60	1050	1530	70
Buildout AM	450	50	940	130	1730	310	60	20	30	450	530	20
Buildout PM	400	20	770	60	860	350	70	30	90	1140	1860	70
5. Portola & SR-241 Ramps												
2015 AM	220	630	250	110	0	1540	610	850	40	100	0	270
2015 PM	900	1020	80	30	0	340	300	890	100	180	0	450
Buildout AM	250	560	260	360	0	1840	560	910	90	230	0	290
Buildout PM	1200	1080	130	170	0	420	300	880	210	190	0	450
12. El Toro & Portola/Sta Margarita												
2015 AM	50	500	260	490	1610	20	310	170	300	50	620	370
2015 PM	330	570	640	430	1010	40	370	430	510	400	1260	650
Buildout AM	60	830	410	580	1950	20	450	180	280	70	640	430
Buildout PM	340	600	750	410	1150	50	490	670	490	590	1700	850
51. El Toro & Glenn Ranch												
2015 AM	0	790	330	0	0	0	210	290	0	120	0	260
2015 PM	0	450	160	0	0	0	190	700	0	420	0	130
Buildout AM	0	1150	500	0	0	0	230	450	0	180	0	250
Buildout PM	0	550	270	0	0	0	180	1100	0	550	0	180
133. Marguerite & El Toro												
2015 AM	10	10	0	610	460	10	370	10	240	10	190	210
2015 PM	10	40	10	420	170	10	140	40	580	10	370	420
Buildout AM	10	10	0	980	860	10	510	10	580	10	260	170
Buildout PM	10	40	10	760	270	10	110	40	960	10	730	490
151. Santiago Cyn/El Toro & Live Oak Cyn												
2015 AM	50	440	0	100	0	80	0	290	70	0	0	0
2015 PM	90	310	0	80	0	70	0	500	150	0	0	0
Buildout AM	50	780	0	100	0	80	0	460	80	0	0	0
Buildout PM	120	410	0	80	0	80	0	760	180	0	0	0

Appendix E

Existing Plus Project Conditions
Intersection Analysis Worksheets

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 PORTOLA PKWY (NS) @ GLENN RANCH RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.555

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 26 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	3	0	1	2	0	3	0	1	1	0
	2	0	3	0	1	2	0	3	0	1	1	0

Volume Module:

Base Vol:	139	1480	319	324	609	58	80	20	38	313	47	636
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	139	1480	319	324	609	58	80	20	38	313	47	636
Added Vol:	0	0	3	1	0	0	0	0	0	8	0	2
PasserByVol:	0	0	0	0	0	0	0	0	0	10	10	10
Initial Fut:	139	1480	322	325	609	58	80	20	38	331	57	648
User Adj:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	139	1480	274	325	609	49	80	20	38	331	57	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	139	1480	274	325	609	49	80	20	38	331	57	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	139	1480	274	325	609	49	80	20	38	331	57	0
OvlAdjVol:	108											

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	1.00	1.00	2.00	2.00	1.00
Final Sat.:	3400	5100	1700	3400	5100	1700	1700	1700	1700	3400	3400	1700

Capacity Analysis Module:

Vol/Sat:	0.04	0.29	0.16	0.10	0.12	0.03	0.05	0.01	0.02	0.10	0.02	0.00
OvlAdjV/S:	0.06											

Crit Moves: ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 PORTOLA PKWY (NS) @ GLENN RANCH RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.562

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 27 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	3	0	1		2	0	3	0	1	
	1	0	1	1	0		2	0	2	0	1	

Volume Module:

Base Vol:	50	852	209	671	1637	76	86	28	80	335	27	471
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	852	209	671	1637	76	86	28	80	335	27	471
Added Vol:	0	0	10	2	0	0	0	0	0	6	0	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	50	852	219	673	1637	76	86	28	80	341	27	472
User Adj:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	50	852	186	673	1637	65	86	28	80	341	27	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	852	186	673	1637	65	86	28	80	341	27	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	50	852	186	673	1637	65	86	28	80	341	27	0
OvlAdjVol:	16											

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	1.00	1.00	2.00	2.00	1.00
Final Sat.:	3400	5100	1700	3400	5100	1700	1700	1700	1700	3400	3400	1700

Capacity Analysis Module:

Vol/Sat:	0.01	0.17	0.11	0.20	0.32	0.04	0.05	0.02	0.05	0.10	0.01	0.00
----------	------	------	------	------	------	------	------	------	------	------	------	------

OvlAdjV/S: 0.01

Crit Moves: ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 PORTOLA PKWY (NS) @ SR-S41 RAMPS (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.415

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 20 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound					
Movement:	L	T	R	L	T	R	L	T	R	L	T	R			
Control:	Protected			Protected			Protected			Protected					
Rights:	Ignore			Ignore			Ignore			Ignore					
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0			
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Lanes:	2	0	3	0	1	2	0	2	0	1	1	0	0	0	1

Volume Module:

Base Vol:	387	1196	27	178	585	206	131	0	119	75	0	648
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	387	1196	27	178	585	206	131	0	119	75	0	648
Added Vol:	0	0	2	0	0	8	3	0	0	1	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	387	1196	29	178	585	214	134	0	119	76	0	648
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	387	1196	0	178	585	0	134	0	0	76	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	387	1196	0	178	585	0	134	0	0	76	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	387	1196	0	178	585	0	134	0	0	76	0	0

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Lanes:	2.00	3.00	1.00	2.00	2.00	1.00	1.00	0.00	1.00	2.00	0.00	1.00
Final Sat.:	3400	5100	1445	3400	3400	1445	1700	0	1445	3400	0	1445

Capacity Analysis Module:

Vol/Sat:	0.11	0.23	0.00	0.05	0.17	0.00	0.08	0.00	0.00	0.02	0.00	0.00
Crit Moves:	****			****			****			****		

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 PORTOLA PKWY (NS) @ SR-S41 RAMPS (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.600

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 29 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R

Control:	Protected			Protected			Protected			Protected					
Rights:	Ignore			Ignore			Ignore			Ignore					
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0			
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Lanes:	2	0	3	0	1	2	0	2	0	1	1	0	0	0	1

Volume Module:

Base Vol:	137	764	46	545	1437	149	138	0	357	58	0	210
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	137	764	46	545	1437	149	138	0	357	58	0	210
Added Vol:	0	0	1	0	0	6	10	0	0	2	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	137	764	47	545	1437	155	148	0	357	60	0	210
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	137	764	0	545	1437	0	148	0	0	60	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	137	764	0	545	1437	0	148	0	0	60	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	137	764	0	545	1437	0	148	0	0	60	0	0

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Lanes:	2.00	3.00	1.00	2.00	2.00	1.00	1.00	0.00	1.00	2.00	0.00	1.00
Final Sat.:	3400	5100	1445	3400	3400	1445	1700	0	1445	3400	0	1445

Capacity Analysis Module:

Vol/Sat:	0.04	0.15	0.00	0.16	0.42	0.00	0.09	0.00	0.00	0.02	0.00	0.00
Crit Moves:	****			****			****			****		

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

 Intersection #3 SANTIAGO CANYON RD (NS) @ MODJESKA GRADE RD (EW)

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: B[14.6]

Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign			
Rights:	Include			Include			Include			Include			
Lanes:	0	0	1	0	0	1	0	0	0	0	1	0	0

Volume Module:

Base Vol:	0	322	10	0	292	0	0	0	0	28	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	322	10	0	292	0	0	0	0	28	0	0
Added Vol:	0	13	0	0	5	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	335	10	0	297	0	0	0	0	28	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	372	11	0	330	0	0	0	0	31	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	372	11	0	330	0	0	0	0	31	0	0

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxxx	xxxxx

Capacity Module:

Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	701	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	408	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	408	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.08	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	14.6	xxxx	xxxxx	
LOS by Move:	*	*	*	*	*	*	*	*	*	B	*	*	
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*	
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			14.6			
ApproachLOS:	*			*			*			B			

 Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

 Intersection #3 SANTIAGO CANYON RD (NS) @ MODJESKA GRADE RD (EW)

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: B[14.7]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	1	0	1	0	0	0	0	0	1	0

Volume Module:

Base Vol:	0	376	38	2	326	0	0	0	0	16	0	2
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	376	38	2	326	0	0	0	0	16	0	2
Added Vol:	0	9	0	0	15	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	385	38	2	341	0	0	0	0	16	0	2
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	0	407	40	2	361	0	0	0	0	17	0	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	407	40	2	361	0	0	0	0	17	0	2

Critical Gap Module:

Critical Gp:xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2
FollowUpTim:xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3

Capacity Module:

Cnflict Vol:	xxxx	xxxx	xxxxx	448	xxxx	xxxxx	xxxx	xxxx	xxxxx	772	772	407
Potent Cap.:	xxxx	xxxx	xxxxx	1123	xxxx	xxxxx	xxxx	xxxx	xxxxx	370	332	648
Move Cap.:	xxxx	xxxx	xxxxx	1123	xxxx	xxxxx	xxxx	xxxx	xxxxx	370	332	648
Volume/Cap:	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	0.05	0.00	0.00

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Control Del:xxxxx	xxxx	xxxx	xxxxx	8.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*	
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	388	xxxxx	
SharedQueue:xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.2	xxxxx	
Shrd ConDel:xxxxx	xxxx	xxxx	xxxxx	8.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	14.7	xxxxx	
Shared LOS:	*	*	*	A	*	*	*	*	*	*	B	*	
ApproachDel:	xxxxxx			xxxxxx			xxxxxx				14.7		
ApproachLOS:	*			*			*				B		

 Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

 Intersection #4 SANTIAGO CANYON RD (NS) @ PROJECT ACCESS (EW)

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: B[12.8]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	1	0	1	0	0	0	0	0	0	1

Volume Module:

Base Vol:	0	332	0	0	320	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	332	0	0	320	0	0	0	0	0	0	0
Added Vol:	0	0	11	5	0	0	0	0	0	29	0	13
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	332	11	5	320	0	0	0	0	29	0	13
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	332	11	5	320	0	0	0	0	29	0	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	332	11	5	320	0	0	0	0	29	0	13

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3

Capacity Module:

Cnflct Vol:	xxxx	xxxx	xxxxx	343	xxxx	xxxxx	xxxx	xxxx	xxxxx	662	xxxx	332
Potent Cap.:	xxxx	xxxx	xxxxx	1227	xxxx	xxxxx	xxxx	xxxx	xxxxx	430	xxxx	714
Move Cap.:	xxxx	xxxx	xxxxx	1227	xxxx	xxxxx	xxxx	xxxx	xxxxx	429	xxxx	714
Volume/Cap:	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	0.07	xxxx	0.02

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	0.1
Control Del:	xxxxx	xxxx	xxxxx	7.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx	14.0	xxxx	10.1
LOS by Move:	*	*	*	A	*	*	*	*	*	B	*	B
Movement:	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	12.8	xxxxxx	xxxxxx
ApproachLOS:	*	*	*	*	*	*	*	*	*	B	*	*

 Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

 Intersection #4 SANTIAGO CANYON RD (NS) @ PROJECT ACCESS (EW)

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: B[14.1]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	1	0	1	0	0	0	0	0	0	1

Volume Module:

Base Vol:	0	414	0	0	342	0	0	0	0	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	414	0	0	342	0	0	0	0	0	0	0
Added Vol:	0	0	34	15	0	0	0	0	0	20	0	9
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	414	34	15	342	0	0	0	0	20	0	9
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	414	34	15	342	0	0	0	0	20	0	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	414	34	15	342	0	0	0	0	20	0	9

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3

Capacity Module:

Cnflct Vol:	xxxx	xxxx	xxxxx	448	xxxx	xxxxx	xxxx	xxxx	xxxxx	786	xxxx	414
Potent Cap.:	xxxx	xxxx	xxxxx	1123	xxxx	xxxxx	xxxx	xxxx	xxxxx	364	xxxx	643
Move Cap.:	xxxx	xxxx	xxxxx	1123	xxxx	xxxxx	xxxx	xxxx	xxxxx	360	xxxx	643
Volume/Cap:	xxxx	xxxx	xxxx	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	0.06	xxxx	0.01

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	0.0
Control Del:	xxxxx	xxxx	xxxxx	8.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	15.6	xxxx	10.7
LOS by Move:	*	*	*	A	*	*	*	*	*	C	*	B
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			14.1		
ApproachLOS:	*			*			*			B		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

 Intersection #5 SANTIAGO CANYON RD (NS) @ LIVE OAK CANYON RD (EW)

Average Delay (sec/veh): 2.8 Worst Case Level Of Service: B[13.7]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	1	0	1	0	0	0	0	1	0	0

Volume Module:

Base Vol:	0	202	55	41	316	0	0	0	0	72	0	66
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	202	55	41	316	0	0	0	0	72	0	66
Added Vol:	0	10	0	2	27	0	0	0	0	0	0	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	212	55	43	343	0	0	0	0	72	0	67
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	0	233	61	47	378	0	0	0	0	79	0	74
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	233	61	47	378	0	0	0	0	79	0	74

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3

Capacity Module:

Cnflct Vol:	xxxx	xxxx	xxxxx	294	xxxx	xxxxx	xxxx	xxxx	xxxxx	736	xxxx	264
Potent Cap.:	xxxx	xxxx	xxxxx	1279	xxxx	xxxxx	xxxx	xxxx	xxxxx	389	xxxx	780
Move Cap.:	xxxx	xxxx	xxxxx	1279	xxxx	xxxxx	xxxx	xxxx	xxxxx	378	xxxx	780
Volume/Cap:	xxxx	xxxx	xxxx	0.04	xxxx	xxxx	xxxx	xxxx	xxxx	0.21	xxxx	0.09

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.8	xxxx	0.3
Control Del:	xxxxx	xxxx	xxxxx	7.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx	17.0	xxxx	10.1
LOS by Move:	*	*	*	A	*	*	*	*	*	C	*	B
Movement:	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			13.7		
ApproachLOS:	*			*			*			B		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

 Intersection #5 SANTIAGO CANYON RD (NS) @ LIVE OAK CANYON RD (EW)

Average Delay (sec/veh): 2.8 Worst Case Level Of Service: C[16.0]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	1	0	1	0	0	0	0	1	0	0

Volume Module:

Base Vol:	0	377	124	82	211	0	0	0	0	61	0	61
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	377	124	82	211	0	0	0	0	61	0	61
Added Vol:	0	32	0	1	19	0	0	0	0	0	0	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	409	124	83	230	0	0	0	0	61	0	63
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	0	418	127	85	235	0	0	0	0	62	0	64
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	418	127	85	235	0	0	0	0	62	0	64

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3

Capacity Module:

Cnflct Vol:	xxxx	xxxx	xxxxx	544	xxxx	xxxxx	xxxx	xxxx	xxxxx	886	xxxx	481
Potent Cap.:	xxxx	xxxx	xxxxx	1035	xxxx	xxxxx	xxxx	xxxx	xxxxx	318	xxxx	589
Move Cap.:	xxxx	xxxx	xxxxx	1035	xxxx	xxxxx	xxxx	xxxx	xxxxx	298	xxxx	589
Volume/Cap:	xxxx	xxxx	xxxx	0.08	xxxx	xxxx	xxxx	xxxx	xxxx	0.21	xxxx	0.11

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	0.3	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.8	xxxx	0.4
Control Del:	xxxxx	xxxx	xxxxx	8.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	20.3	xxxx	11.9
LOS by Move:	*	*	*	A	*	*	*	*	*	C	*	B
Movement:	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	16.0	xxxxxx	xxxxxx
ApproachLOS:	*	*	*	*	*	*	*	*	*	C	*	*

 Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 EL TORO RD (NS) @ GLENN RANCH RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.510

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 24 Level Of Service: A

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

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Control: Protected Permitted Split Phase Split Phase

Rights: Include Include Ovl Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 1 0 1 0 0 0 0 1 1 0 1 0 0 0 0 0

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Volume Module:

Base Vol: 228 280 0 0 553 198 50 0 194 0 0 0

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 228 280 0 0 553 198 50 0 194 0 0 0

Added Vol: 0 6 0 0 17 11 4 0 0 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 228 286 0 0 570 209 54 0 194 0 0 0

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.85 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 228 286 0 0 570 209 54 0 165 0 0 0

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 228 286 0 0 570 209 54 0 165 0 0 0

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

FinalVolume: 228 286 0 0 570 209 54 0 165 0 0 0

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Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Lanes: 1.00 1.00 0.00 0.00 1.46 0.54 1.00 0.00 1.00 0.00 0.00 0.00

Final Sat.: 1700 1700 0 0 2488 912 1700 0 1700 0 0 0

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Capacity Analysis Module:

Vol/Sat: 0.13 0.17 0.00 0.00 0.23 0.23 0.03 0.00 0.10 0.00 0.00 0.00

Crit Moves: **** **** ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 EL TORO RD (NS) @ GLENN RANCH RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.497

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 30 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	1	1	0	1	0	0	0

Volume Module:

Base Vol:	165	481	0	0	341	67	247	0	171	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	165	481	0	0	341	67	247	0	171	0	0	0
Added Vol:	0	20	0	0	12	7	12	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	165	501	0	0	353	74	259	0	171	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	165	501	0	0	353	74	259	0	145	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	165	501	0	0	353	74	259	0	145	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	165	501	0	0	353	74	259	0	145	0	0	0

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	0.00	1.65	0.35	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1700	1700	0	0	2811	589	1700	0	1700	0	0	0

Capacity Analysis Module:

Vol/Sat:	0.10	0.29	0.00	0.00	0.13	0.13	0.15	0.00	0.09	0.00	0.00	0.00
Crit Moves:	****						****					

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #7 MARGUERITE PKWY (NS) @ EL TORO RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.332

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 18 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	1	0	1	0	1	2	0	2	0	1	0

Volume Module:

Base Vol:	298	7	257	1	7	3	2	135	120	444	387	2
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	298	7	257	1	7	3	2	135	120	444	387	2
Added Vol:	0	0	2	0	0	0	0	4	0	6	11	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	298	7	259	1	7	3	2	139	120	450	398	2
User Adj:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	298	7	220	1	7	3	2	139	102	450	398	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	298	7	220	1	7	3	2	139	102	450	398	2
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	298	7	220	1	7	3	2	139	102	450	398	2
OvlAdjVol:	0											

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	1.99	0.01
Final Sat.:	3400	1700	1700	1700	3400	1700	3400	3400	1700	3400	3383	17

Capacity Analysis Module:

Vol/Sat:	0.09	0.00	0.13	0.00	0.00	0.00	0.00	0.04	0.06	0.13	0.12	0.12
OvlAdjV/S:	0.00											

Crit Moves: ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #7 MARGUERITE PKWY (NS) @ EL TORO RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.431

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 21 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound							
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase				Split Phase				Protected				Protected							
Rights:	Ovl				Include				Include				Include							
Min. Green:	0		0		0	0		0		0	0		0		0	0		0		0
Y+R:	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0
Lanes:	1	1	1	0	1	1	0	1	1	1	2	0	2	0	1	2	0	1	1	0

Volume Module:

Base Vol:	138	36	431	15	41	16	7	291	299	352	177	11
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	138	36	431	15	41	16	7	291	299	352	177	11
Added Vol:	0	0	7	0	0	0	0	12	0	4	7	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	138	36	438	15	41	16	7	303	299	356	184	11
User Adj:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	138	36	372	15	41	14	7	303	254	356	184	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	138	36	372	15	41	14	7	303	254	356	184	11
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	138	36	372	15	41	14	7	303	254	356	184	11
OvlAdjVol:	194											

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	1.89	0.11
Final Sat.:	3400	1700	1700	1700	3400	1700	3400	3400	1700	3400	3208	192

Capacity Analysis Module:

Vol/Sat:	0.04	0.02	0.22	0.01	0.01	0.01	0.00	0.09	0.15	0.10	0.06	0.06
OvlAdjV/S:	0.11											
Crit Moves:	****											

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #8 PORTOLA/SANTA MARGARITA PKWY (NS) & EL TORO RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.640

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 32 Level Of Service: B

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

-----|-----|-----|-----|

Control: Protected Protected Protected Protected

Rights: Include Include Ignore Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 2 0 4 0 1 2 0 3 0 1 1 0 3 0 1

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Volume Module:

Base Vol: 601 1209 33 26 468 254 297 176 383 36 563 175

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 601 1209 33 26 468 254 297 176 383 36 563 175

Added Vol: 0 0 1 1 0 0 0 2 0 2 6 2

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 601 1209 34 27 468 254 297 178 383 38 569 177

User Adj: 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.00 1.00 1.00 0.85

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00

PHF Volume: 601 1209 29 27 468 216 297 178 0 38 569 150

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 601 1209 29 27 468 216 297 178 0 38 569 150

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00

FinalVolume: 601 1209 29 27 468 216 297 178 0 38 569 150

-----|-----|-----|-----|

Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Lanes: 2.00 4.00 1.00 2.00 3.00 1.00 1.00 3.00 1.00 1.00 3.00 1.00

Final Sat.: 3400 6800 1700 3400 5100 1700 1700 5100 1700 1700 5100 1700

-----|-----|-----|-----|

Capacity Analysis Module:

Vol/Sat: 0.18 0.18 0.02 0.01 0.09 0.13 0.17 0.03 0.00 0.02 0.11 0.09

Crit Moves: **** **** **** ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #8 PORTOLA/SANTA MARGARITA PKWY (NS) & EL TORO RD (EW)

Cycle (sec): 100 Critical Vol./Cap. (X): 0.606

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 29 Level Of Service: B

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

-----|-----|-----|-----|

Control: Protected Protected Protected Protected

Rights: Include Include Ignore Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 2 0 4 0 1 2 0 3 0 1 1 0 3 0 1

-----|-----|-----|-----|

Volume Module:

Base Vol: 402 672 30 207 1154 418 267 407 653 20 223 107

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 402 672 30 207 1154 418 267 407 653 20 223 107

Added Vol: 0 0 2 2 0 0 0 7 0 1 4 1

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 402 672 32 209 1154 418 267 414 653 21 227 108

User Adj: 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.00 1.00 1.00 0.85

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00

PHF Volume: 402 672 27 209 1154 355 267 414 0 21 227 92

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 402 672 27 209 1154 355 267 414 0 21 227 92

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00

FinalVolume: 402 672 27 209 1154 355 267 414 0 21 227 92

-----|-----|-----|-----|

Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Lanes: 2.00 4.00 1.00 2.00 3.00 1.00 1.00 3.00 1.00 1.00 3.00 1.00

Final Sat.: 3400 6800 1700 3400 5100 1700 1700 5100 1700 1700 5100 1700

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Capacity Analysis Module:

Vol/Sat: 0.12 0.10 0.02 0.06 0.23 0.21 0.16 0.08 0.00 0.01 0.04 0.05

Crit Moves: **** **** **** ****

Appendix F

Interim (Year 2015) Without Project Conditions
Intersection Analysis Worksheets

Level Of Service Computation Report

ICU 1 (Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 PORTOLA PKWY (NS) @ GLENN RANCH RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.609

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 29 Level Of Service: B

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

-----|-----|-----|-----|

Control: Protected Protected Protected Protected

Rights: Ovl Include Include Ignore

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 2 0 3 0 1 2 0 3 0 1 1 0 1 0 2 0 2 0 1

-----|-----|-----|-----|

Volume Module:

Base Vol: 100 1380 320 460 570 40 60 20 30 450 50 930

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 100 1380 320 460 570 40 60 20 30 450 50 930

Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 10 10 10

Initial Fut: 100 1380 320 460 570 40 60 20 30 460 60 940

User Adj: 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 1.00 1.00 1.00 0.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00

PHF Volume: 100 1380 272 460 570 34 60 20 30 460 60 0

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 100 1380 272 460 570 34 60 20 30 460 60 0

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00

Final Volume: 100 1380 272 460 570 34 60 20 30 460 60 0

OvlAdjVol: 42

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Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Lanes: 2.00 3.00 1.00 2.00 3.00 1.00 1.00 1.00 1.00 2.00 2.00 1.00

Final Sat.: 3400 5100 1700 3400 5100 1700 1700 1700 1700 3400 3400 1700

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Capacity Analysis Module:

Vol/Sat: 0.03 0.27 0.16 0.14 0.11 0.02 0.04 0.01 0.02 0.14 0.02 0.00

OvlAdjV/S: 0.02

Crit Moves: **** **** **** ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 PORTOLA PKWY (NS) @ GLENN RANCH RD (EW)

Cycle (sec): 100 Critical Vol./Cap. (X): 0.646

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 32 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R

Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	3	0	1	2	0	3	0	1	1	0
	2	0	3	0	1	2	0	3	0	1	2	0

Volume Module:

Base Vol:	60	760	360	1050	1530	70	100	20	60	350	20	690
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	60	760	360	1050	1530	70	100	20	60	350	20	690
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	60	760	360	1050	1530	70	100	20	60	350	20	690
User Adj:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	60	760	306	1050	1530	60	100	20	60	350	20	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	60	760	306	1050	1530	60	100	20	60	350	20	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	60	760	306	1050	1530	60	100	20	60	350	20	0
OvlAdjVol:	131											

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	1.00	1.00	2.00	2.00	1.00
Final Sat.:	3400	5100	1700	3400	5100	1700	1700	1700	1700	3400	3400	1700

Capacity Analysis Module:

Vol/Sat:	0.02	0.15	0.18	0.31	0.30	0.04	0.06	0.01	0.04	0.10	0.01	0.00
OvlAdjV/S:	0.08											
Crit Moves:	****			****			****			****		

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 PORTOLA PKWY (NS) @ SR-S41 RAMPS (EW)

Cycle (sec): 100 Critical Vol./Cap. (X): 0.474

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 23 Level Of Service: A

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

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Control: Protected Protected Protected Protected

Rights: Ignore Ignore Ignore Ignore

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 2 0 3 0 1 2 0 2 0 1 1 0 0 0 1 2 0 0 0 1

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Volume Module:

Base Vol: 610 850 40 220 630 250 100 0 270 110 0 1540

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 610 850 40 220 630 250 100 0 270 110 0 1540

Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 610 850 40 220 630 250 100 0 270 110 0 1540

User Adj: 1.00 1.00 0.00 1.00 1.00 0.00 1.00 1.00 0.00 1.00 1.00 0.00

PHF Adj: 1.00 1.00 0.00 1.00 1.00 0.00 1.00 1.00 0.00 1.00 1.00 0.00

PHF Volume: 610 850 0 220 630 0 100 0 0 110 0 0

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 610 850 0 220 630 0 100 0 0 110 0 0

PCE Adj: 1.00 1.00 0.00 1.00 1.00 0.00 1.00 1.00 0.00 1.00 1.00 0.00

MLF Adj: 1.00 1.00 0.00 1.00 1.00 0.00 1.00 1.00 0.00 1.00 1.00 0.00

FinalVolume: 610 850 0 220 630 0 100 0 0 110 0 0

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Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85

Lanes: 2.00 3.00 1.00 2.00 2.00 1.00 1.00 0.00 1.00 2.00 0.00 1.00

Final Sat.: 3400 5100 1445 3400 3400 1445 1700 0 1445 3400 0 1445

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Capacity Analysis Module:

Vol/Sat: 0.18 0.17 0.00 0.06 0.19 0.00 0.06 0.00 0.00 0.03 0.00 0.00

Crit Moves: **** **** **** ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 PORTOLA PKWY (NS) @ SR-S41 RAMPS (EW)

Cycle (sec): 100 Critical Vol./Cap. (X): 0.595

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 29 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound					
Movement:	L	T	R	L	T	R	L	T	R	L	T	R			
Control:	Protected			Protected			Protected			Protected					
Rights:	Ignore			Ignore			Ignore			Ignore					
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0			
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Lanes:	2	0	3	0	1	2	0	2	0	1	1	0	0	0	1

Volume Module:

Base Vol:	300	890	100	900	1020	80	180	0	450	30	0	340
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	300	890	100	900	1020	80	180	0	450	30	0	340
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	300	890	100	900	1020	80	180	0	450	30	0	340
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	300	890	0	900	1020	0	180	0	0	30	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	300	890	0	900	1020	0	180	0	0	30	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	300	890	0	900	1020	0	180	0	0	30	0	0

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Lanes:	2.00	3.00	1.00	2.00	2.00	1.00	1.00	0.00	1.00	2.00	0.00	1.00
Final Sat.:	3400	5100	1445	3400	3400	1445	1700	0	1445	3400	0	1445

Capacity Analysis Module:

Vol/Sat:	0.09	0.17	0.00	0.26	0.30	0.00	0.11	0.00	0.00	0.01	0.00	0.00
Crit Moves:	****			****			****			****		

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

 Intersection #3 SANTIAGO CANYON RD (NS) @ MODJESKA GRADE RD (EW)

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: C[15.1]

Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign			
Rights:	Include			Include			Include			Include			
Lanes:	0	0	1	0	0	1	0	0	0	0	1	0	0

Volume Module:

Base Vol:	0	322	10	0	292	0	0	0	0	28	0	0
Growth Adj:	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Initial Bse:	0	348	11	0	315	0	0	0	0	30	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	348	11	0	315	0	0	0	0	30	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	386	12	0	350	0	0	0	0	34	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	386	12	0	350	0	0	0	0	34	0	0

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	xxxxx

Capacity Module:

Cnflct Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	736	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	389	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	389	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.09	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.3	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	15.1	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	C	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			15.1		
ApproachLOS:	*			*			*			C		

 Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3 SANTIAGO CANYON RD (NS) @ MODJESKA GRADE RD (EW)

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: B[14.6]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	1	0	1	0	0	0	0	0	1	0

Volume Module:

Base Vol:	0	376	38	2	326	0	0	0	0	16	0	2
Growth Adj:	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Initial Bse:	0	406	41	2	352	0	0	0	0	17	0	2
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	406	41	2	352	0	0	0	0	17	0	2
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	406	41	2	352	0	0	0	0	17	0	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	406	41	2	352	0	0	0	0	17	0	2

Critical Gap Module:

Critical Gp:xxxxx xxxxx xxxxx	4.1	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	6.4	6.5	6.2
FollowUpTim:xxxxx xxxxx xxxxx	2.2	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	3.5	4.0	3.3

Capacity Module:

Cnflct Vol: xxxxx xxxxx xxxxx	447	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	762	762	406
Potent Cap.: xxxxx xxxxx xxxxx	1124	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	376	337	649
Move Cap.: xxxxx xxxxx xxxxx	1124	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	375	336	649
Volume/Cap: xxxxx xxxxx xxxxx	0.00	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	0.05	0.00	0.00

Level Of Service Module:

2Way95thQ: xxxxx xxxxx xxxxx	0.0	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx
Control Del:xxxxxx xxxxx xxxxx	8.2	xxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx
LOS by Move: * * *	A	*	*	*	*	*	*	*	*
Movement: LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	393	xxxxxx
SharedQueue:xxxxxx xxxxx xxxxx	0.0	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	0.2	xxxxxx
Shrd ConDel:xxxxxx xxxxx xxxxx	8.2	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	14.6	xxxxxx
Shared LOS: * * *	A	*	*	*	*	*	*	B	*
ApproachDel: xxxxxx	xxxxxxx	xxxxxxx	xxxxxxx	xxxxxxx	xxxxxxx	xxxxxxx	xxxxxxx	14.6	xxxxxxx
ApproachLOS: *	*	*	*	*	*	*	*	B	*

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 SANTIAGO CANYON RD (NS) @ LIVE OAK CANYON RD (EW)

Average Delay (sec/veh): 3.8 Worst Case Level Of Service: C[19.3]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	1	0	1	0	0	0	0	1	0	0

Volume Module:

Base Vol:	0	290	70	50	440	0	0	0	0	100	0	80
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	290	70	50	440	0	0	0	0	100	0	80
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	290	70	50	440	0	0	0	0	100	0	80
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	0	319	77	55	485	0	0	0	0	110	0	88
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	319	77	55	485	0	0	0	0	110	0	88

Critical Gap Module:

Critical Gp:xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3

Capacity Module:

Cnflct Vol:	xxxx	xxxx	xxxxx	396	xxxx	xxxxx	xxxx	xxxx	xxxxx	953	xxxx	358
Potent Cap.:	xxxx	xxxx	xxxxx	1173	xxxx	xxxxx	xxxx	xxxx	xxxxx	290	xxxx	691
Move Cap.:	xxxx	xxxx	xxxxx	1173	xxxx	xxxxx	xxxx	xxxx	xxxxx	280	xxxx	691
Volume/Cap:	xxxx	xxxx	xxxx	0.05	xxxx	xxxx	xxxx	xxxx	xxxx	0.39	xxxx	0.13

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx	1.8	xxxx	0.4
Control Del:xxxxx	xxxx	xxxx	xxxxx	8.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	26.0	xxxx	11.0
LOS by Move:	*	*	*	A	*	*	*	*	*	D	*	B
Movement:	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:xxxxx	xxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:xxxxx	xxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	19.3	xxxxxx	xxxxxx
ApproachLOS:	*	*	*	*	*	*	*	*	*	C	*	*

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
*****
Intersection #5 SANTIAGO CANYON RD (NS) @ LIVE OAK CANYON RD (EW)
*****
Average Delay (sec/veh):      3.4      Worst Case Level Of Service: C[ 21.4]
*****
Approach:      North Bound      South Bound      East Bound      West Bound
Movement:      L - T - R      L - T - R      L - T - R      L - T - R
-----|-----|-----|-----|
Control:      Uncontrolled      Uncontrolled      Stop Sign      Stop Sign
Rights:      Include      Include      Include      Include
Lanes:      0 0 0 1 0      1 0 1 0 0      0 0 0 0 0      1 0 0 0 1
-----|-----|-----|-----|
Volume Module:
Base Vol:      0 500 150      90 310 0      0 0 0 0      80 0 70
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 0 500 150      90 310 0      0 0 0 0      80 0 70
Added Vol: 0 0 0      0 0 0      0 0 0 0      0 0 0
PasserByVol: 0 0 0      0 0 0      0 0 0 0      0 0 0
Initial Fut: 0 500 150      90 310 0      0 0 0 0      80 0 70
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 0 500 150      90 310 0      0 0 0 0      80 0 70
Reduct Vol: 0 0 0      0 0 0      0 0 0 0      0 0 0
FinalVolume: 0 500 150      90 310 0      0 0 0 0      80 0 70
-----|-----|-----|-----|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx      4.1 xxxxx xxxxx xxxxx xxxx xxxxx      6.4 xxxxx 6.2
FollowUpTim:xxxxx xxxx xxxxx      2.2 xxxxx xxxxx xxxxx xxxx xxxxx      3.5 xxxxx 3.3
-----|-----|-----|-----|
Capacity Module:
Cnflct Vol: xxxxx xxxx xxxxx      650 xxxxx xxxxx xxxxx xxxx xxxxx      1065 xxxxx 575
Potent Cap.: xxxxx xxxx xxxxx      946 xxxxx xxxxx xxxxx xxxx xxxxx      249 xxxxx 521
Move Cap.: xxxxx xxxx xxxxx      946 xxxxx xxxxx xxxxx xxxx xxxxx      231 xxxxx 521
Volume/Cap: xxxxx xxxx xxxxx      0.10 xxxxx xxxx xxxxx xxxx xxxxx      0.35 xxxxx 0.13
-----|-----|-----|-----|
Level Of Service Module:
2Way95thQ: xxxxx xxxx xxxxx      0.3 xxxxx xxxxx xxxxx xxxx xxxxx      1.5 xxxxx 0.5
Control Del:xxxxx xxxx xxxxx      9.2 xxxxx xxxxx xxxxx xxxx xxxxx      28.7 xxxxx 13.0
LOS by Move: * * *      A * * * * *      D * * *
Movement: LT - LTR - RT      LT - LTR - RT      LT - LTR - RT      LT - LTR - RT
Shared Cap.: xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
SharedQueue:xxxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS: * * *      * * * * *      * * * * *
ApproachDel: xxxxxx      xxxxxx      xxxxxx      21.4
ApproachLOS: *      *      *      C
*****
Note: Queue reported is the number of cars per lane.
*****

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Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 EL TORO RD (NS) @ GLENN RANCH RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.633

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 31 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	1	1	0	1	0	0	0

Volume Module:

Base Vol:	210	290	0	0	790	330	120	0	260	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	210	290	0	0	790	330	120	0	260	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	210	290	0	0	790	330	120	0	260	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	210	290	0	0	790	330	120	0	221	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	210	290	0	0	790	330	120	0	221	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	210	290	0	0	790	330	120	0	221	0	0	0

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	0.00	1.41	0.59	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1700	1700	0	0	2398	1002	1700	0	1700	0	0	0

Capacity Analysis Module:

Vol/Sat:	0.12	0.17	0.00	0.00	0.33	0.33	0.07	0.00	0.13	0.00	0.00	0.00
Crit Moves:	****				****				****			

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 EL TORO RD (NS) @ GLENN RANCH RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.709

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 80 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R

Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	1	1	0	1	0	0	0

Volume Module:

Base Vol:	190	700	0	0	450	160	420	0	130	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	190	700	0	0	450	160	420	0	130	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	190	700	0	0	450	160	420	0	130	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	190	700	0	0	450	160	420	0	111	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	190	700	0	0	450	160	420	0	111	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	190	700	0	0	450	160	420	0	111	0	0	0

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	0.00	1.48	0.52	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1700	1700	0	0	2508	892	1700	0	1700	0	0	0

Capacity Analysis Module:

Vol/Sat:	0.11	0.41	0.00	0.00	0.18	0.18	0.25	0.00	0.07	0.00	0.00	0.00
Crit Moves:	****						****					

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #7 MARGUERITE PKWY (NS) @ EL TORO RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.449

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 22 Level Of Service: A

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

-----|-----|-----|-----|

Control: Split Phase Split Phase Protected Protected

Rights: Ovl Include Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 1 1 1 0 1 1 0 1 1 1 2 0 2 0 1 2 0 1 1 0

-----|-----|-----|-----|

Volume Module:

Base Vol: 370 10 240 10 10 0 10 190 210 610 460 10

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 370 10 240 10 10 0 10 190 210 610 460 10

Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 370 10 240 10 10 0 10 190 210 610 460 10

User Adj: 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 370 10 204 10 10 0 10 190 179 610 460 10

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 370 10 204 10 10 0 10 190 179 610 460 10

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

FinalVolume: 370 10 204 10 10 0 10 190 179 610 460 10

OvlAdjVol: 0

-----|-----|-----|-----|

Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Lanes: 2.00 1.00 1.00 1.00 2.00 1.00 2.00 2.00 1.00 2.00 1.96 0.04

Final Sat.: 3400 1700 1700 1700 3400 1700 3400 3400 1700 3400 3328 72

-----|-----|-----|-----|

Capacity Analysis Module:

Vol/Sat: 0.11 0.01 0.12 0.01 0.00 0.00 0.00 0.06 0.11 0.18 0.14 0.14

OvlAdjV/S: 0.00

Crit Moves: **** **** **** ****

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
*****
Intersection #7 MARGUERITE PKWY (NS) @ EL TORO RD (EW)
*****
Cycle (sec):          100          Critical Vol./Cap.(X):          0.562
Loss Time (sec):       5          Average Delay (sec/veh):          xxxxxx
Optimal Cycle:        27          Level Of Service:          A
*****
Approach:      North Bound      South Bound      East Bound      West Bound
Movement:      L - T - R      L - T - R      L - T - R      L - T - R
-----|-----|-----|-----|
Control:      Split Phase      Split Phase      Protected      Protected
Rights:      Ovl      Include      Include      Include
Min. Green:      0 0 0      0 0 0      0 0 0      0 0 0
Y+R:      4.0 4.0 4.0      4.0 4.0 4.0      4.0 4.0 4.0      4.0 4.0 4.0
Lanes:      1 1 1 0 1      1 0 1 1 1      2 0 2 0 1      2 0 1 1 0
-----|-----|-----|-----|
Volume Module:
Base Vol:      140 40 580      10 40 10      10 370 420      420 170 10
Growth Adj:      1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00
Initial Bse:      140 40 580      10 40 10      10 370 420      420 170 10
Added Vol:      0 0 0      0 0 0      0 0 0      0 0 0
PasserByVol:      0 0 0      0 0 0      0 0 0      0 0 0
Initial Fut:      140 40 580      10 40 10      10 370 420      420 170 10
User Adj:      1.00 1.00 0.85      1.00 1.00 0.85      1.00 1.00 0.85      1.00 1.00 1.00
PHF Adj:      1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00
PHF Volume:      140 40 493      10 40 9      10 370 357      420 170 10
Reduct Vol:      0 0 0      0 0 0      0 0 0      0 0 0
Reduced Vol:      140 40 493      10 40 9      10 370 357      420 170 10
PCE Adj:      1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00
MLF Adj:      1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00
FinalVolume:      140 40 493      10 40 9      10 370 357      420 170 10
OvlAdjVol:      283
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:      1700 1700 1700      1700 1700 1700      1700 1700 1700      1700 1700 1700
Adjustment:      1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00      1.00 1.00 1.00
Lanes:      2.00 1.00 1.00      1.00 2.00 1.00      2.00 2.00 1.00      2.00 1.89 0.11
Final Sat.:      3400 1700 1700      1700 3400 1700      3400 3400 1700      3400 3211 189
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:      0.04 0.02 0.29      0.01 0.01 0.01      0.00 0.11 0.21      0.12 0.05 0.05
OvlAdjV/S:      0.17
Crit Moves:      ****          ****          ****          ****
*****

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Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #8 PORTOLA/SANTA MARGARITA PKWY (NS) & EL TORO RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.691

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 36 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	4	0	1		2	0	3	0	1	

Volume Module:												
Base Vol:	490	1610	20	50	620	370	310	170	300	50	500	260
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	490	1610	20	50	620	370	310	170	300	50	500	260
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	490	1610	20	50	620	370	310	170	300	50	500	260
User Adj:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.00	1.00	1.00	0.85
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	490	1610	17	50	620	315	310	170	0	50	500	221
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	490	1610	17	50	620	315	310	170	0	50	500	221
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	490	1610	17	50	620	315	310	170	0	50	500	221

Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	4.00	1.00	2.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3400	6800	1700	3400	5100	1700	1700	5100	1700	1700	5100	1700

Capacity Analysis Module:												
Vol/Sat:	0.14	0.24	0.01	0.01	0.12	0.19	0.18	0.03	0.00	0.03	0.10	0.13
Crit Moves:	****					****	****					****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #8 PORTOLA/SANTA MARGARITA PKWY (NS) & EL TORO RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 1.039

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	4	0	1		2	0	3	0	1	
	1	0	3	0	1		1	0	3	0	1	

Volume Module:

Base Vol:	430	1010	40	400	1260	650	370	430	510	330	570	640
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	430	1010	40	400	1260	650	370	430	510	330	570	640
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	430	1010	40	400	1260	650	370	430	510	330	570	640
User Adj:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.00	1.00	1.00	0.85
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	430	1010	34	400	1260	553	370	430	0	330	570	544
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	430	1010	34	400	1260	553	370	430	0	330	570	544
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	430	1010	34	400	1260	553	370	430	0	330	570	544

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	4.00	1.00	2.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3400	6800	1700	3400	5100	1700	1700	5100	1700	1700	5100	1700

Capacity Analysis Module:

Vol/Sat:	0.13	0.15	0.02	0.12	0.25	0.33	0.22	0.08	0.00	0.19	0.11	0.32
Crit Moves:	****					****	****					****

Appendix G

Interim (Year 2015) With Project Conditions
Intersection Analysis Worksheets

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 PORTOLA PKWY (NS) @ GLENN RANCH RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.609

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 29 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	3	0	1		2	0	3	0	1	

Volume Module:												
Base Vol:	100	1380	320	460	570	40	60	20	30	450	50	930
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	100	1380	320	460	570	40	60	20	30	450	50	930
Added Vol:	0	0	3	1	0	0	0	0	0	8	0	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	100	1380	323	461	570	40	60	20	30	458	50	932
User Adj:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	100	1380	275	461	570	34	60	20	30	458	50	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	100	1380	275	461	570	34	60	20	30	458	50	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	100	1380	275	461	570	34	60	20	30	458	50	0
OvlAdjVol:	46											

Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	1.00	1.00	2.00	2.00	1.00
Final Sat.:	3400	5100	1700	3400	5100	1700	1700	1700	1700	3400	3400	1700

Capacity Analysis Module:												
Vol/Sat:	0.03	0.27	0.16	0.14	0.11	0.02	0.04	0.01	0.02	0.13	0.01	0.00
OvlAdjV/S:	0.03											
Crit Moves:	****	****					****	****				

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 PORTOLA PKWY (NS) @ GLENN RANCH RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.648

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 32 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	3	0	1		2	0	3	0	1	
	1	0	1	1	0		1	0	1	1	0	

Volume Module:

Base Vol:	60	760	360	1050	1530	70	100	20	60	350	20	690
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	60	760	360	1050	1530	70	100	20	60	350	20	690
Added Vol:	0	0	10	2	0	0	0	0	0	6	0	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	60	760	370	1052	1530	70	100	20	60	356	20	691
User Adj:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	60	760	315	1052	1530	60	100	20	60	356	20	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	60	760	315	1052	1530	60	100	20	60	356	20	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	60	760	315	1052	1530	60	100	20	60	356	20	0
OvlAdjVol:	137											

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	1.00	1.00	2.00	2.00	1.00
Final Sat.:	3400	5100	1700	3400	5100	1700	1700	1700	1700	3400	3400	1700

Capacity Analysis Module:

Vol/Sat:	0.02	0.15	0.19	0.31	0.30	0.04	0.06	0.01	0.04	0.10	0.01	0.00
OvlAdjV/S:	0.08											

Crit Moves: ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 PORTOLA PKWY (NS) @ SR-S41 RAMPS (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.475

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 23 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ignore			Ignore			Ignore			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	3	0	1		2	0	2	0	1	

Volume Module:

Base Vol:	610	850	40	220	630	250	100	0	270	110	0	1540
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	610	850	40	220	630	250	100	0	270	110	0	1540
Added Vol:	0	0	2	0	0	8	3	0	0	1	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	610	850	42	220	630	258	103	0	270	111	0	1540
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	610	850	0	220	630	0	103	0	0	111	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	610	850	0	220	630	0	103	0	0	111	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	610	850	0	220	630	0	103	0	0	111	0	0

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	2.00	1.00	1.00	0.00	1.00	2.00	0.00	1.00
Final Sat.:	3400	5100	1700	3400	3400	1700	1700	0	1700	3400	0	1700

Capacity Analysis Module:

Vol/Sat:	0.18	0.17	0.00	0.06	0.19	0.00	0.06	0.00	0.00	0.03	0.00	0.00
Crit Moves:	****			****			****			****		

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 PORTOLA PKWY (NS) @ SR-S41 RAMPS (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.601

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 29 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R

Control: Protected Protected Protected Protected

Rights: Ignore Ignore Ignore Ignore

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 2 0 3 0 1 2 0 2 0 1 1 0 0 0 1 2 0 0 0 1

Volume Module:

Base Vol: 300 890 100 900 1020 80 180 0 450 30 0 340

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 300 890 100 900 1020 80 180 0 450 30 0 340

Added Vol: 0 0 1 0 0 6 10 0 0 2 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 300 890 101 900 1020 86 190 0 450 32 0 340

User Adj: 1.00 1.00 0.00 1.00 1.00 0.00 1.00 1.00 0.00 1.00 1.00 0.00

PHF Adj: 1.00 1.00 0.00 1.00 1.00 0.00 1.00 1.00 0.00 1.00 1.00 0.00

PHF Volume: 300 890 0 900 1020 0 190 0 0 32 0 0

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 300 890 0 900 1020 0 190 0 0 32 0 0

PCE Adj: 1.00 1.00 0.00 1.00 1.00 0.00 1.00 1.00 0.00 1.00 1.00 0.00

MLF Adj: 1.00 1.00 0.00 1.00 1.00 0.00 1.00 1.00 0.00 1.00 1.00 0.00

FinalVolume: 300 890 0 900 1020 0 190 0 0 32 0 0

Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Lanes: 2.00 3.00 1.00 2.00 2.00 1.00 1.00 0.00 1.00 2.00 0.00 1.00

Final Sat.: 3400 5100 1700 3400 3400 1700 1700 0 1700 3400 0 1700

Capacity Analysis Module:

Vol/Sat: 0.09 0.17 0.00 0.26 0.30 0.00 0.11 0.00 0.00 0.01 0.00 0.00

Crit Moves: **** **** **** ****

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3 SANTIAGO CANYON RD (NS) @ MODJESKA GRADE RD (EW)

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: C[15.4]

Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign			
Rights:	Include			Include			Include			Include			
Lanes:	0	0	1	0	0	1	0	0	0	0	1	0	0

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	0	322	10	0	292	0	0	0	0	28	0	0
Growth Adj:	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Initial Bse:	0	348	11	0	315	0	0	0	0	30	0	0
Added Vol:	0	13	0	0	5	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	361	11	0	320	0	0	0	0	30	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	400	12	0	356	0	0	0	0	34	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	400	12	0	356	0	0	0	0	34	0	0

Critical Gap Module:	North Bound			South Bound			East Bound			West Bound		
Critical Gp:	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	6.4	xxxxx	xxxxx
FollowUpTim:	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	3.5	xxxxx	xxxxx

Capacity Module:	North Bound			South Bound			East Bound			West Bound		
Cnflct Vol:	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	756	xxxxx	xxxxx
Potent Cap.:	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	379	xxxxx	xxxxx
Move Cap.:	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	379	xxxxx	xxxxx
Volume/Cap:	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	0.09	xxxxx	xxxxx

Level Of Service Module:	North Bound			South Bound			East Bound			West Bound		
2Way95thQ:	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	0.3	xxxxx	xxxxx
Control Del:	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	15.4	xxxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	C	*	*
Movement:	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT
Shared Cap.:	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx
SharedQueue:	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx
Shrd ConDel:	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	15.4	xxxxxx	xxxxxx
ApproachLOS:	*	*	*	*	*	*	*	*	*	C	*	*

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3 SANTIAGO CANYON RD (NS) @ MODJESKA GRADE RD (EW)

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: B[14.9]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	1	0	1	0	0	0	0	0	1	0

Volume Module:

Base Vol:	0	376	38	2	326	0	0	0	0	16	0	2
Growth Adj:	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Initial Bse:	0	406	41	2	352	0	0	0	0	17	0	2
Added Vol:	0	9	0	0	15	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	415	41	2	367	0	0	0	0	17	0	2
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	415	41	2	367	0	0	0	0	17	0	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	415	41	2	367	0	0	0	0	17	0	2

Critical Gap Module:

Critical Gp:xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2
FollowUpTim:xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3

Capacity Module:

Cnflct Vol:	xxxx	xxxx	xxxxx	456	xxxx	xxxxx	xxxx	xxxx	xxxxx	786	786	415
Potent Cap.:	xxxx	xxxx	xxxxx	1115	xxxx	xxxxx	xxxx	xxxx	xxxxx	364	326	642
Move Cap.:	xxxx	xxxx	xxxxx	1115	xxxx	xxxxx	xxxx	xxxx	xxxxx	363	326	642
Volume/Cap:	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	0.05	0.00	0.00

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:xxxxx	xxxx	xxxx	xxxxx	8.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	381	xxxxx
SharedQueue:xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.2	xxxxx
Shrd ConDel:xxxxx	xxxx	xxxx	xxxxx	8.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	14.9	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	B	*
ApproachDel:	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	14.9	xxxxxx
ApproachLOS:	*	*	*	*	*	*	*	*	*	*	B	*

Note: Queue reported is the number of cars per lane.

```

-----
Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
*****
Intersection #4 SANTIAGO CANYON RD (NS) @ PROJECT ACCESS (EW)
*****
Average Delay (sec/veh):      0.8      Worst Case Level Of Service: B[ 13.4]
*****
Approach:      North Bound      South Bound      East Bound      West Bound
Movement:      L - T - R      L - T - R      L - T - R      L - T - R
-----|-----|-----|-----|
Control:      Uncontrolled      Uncontrolled      Stop Sign      Stop Sign
Rights:      Include      Include      Include      Include
Lanes:      0 0 1 0 1      1 0 1 0 0      0 0 0 0 0      1 0 0 0 1
-----|-----|-----|-----|
Volume Module:
Base Vol:      0 332      0      0 320      0      0 0 0      0 0 0
Growth Adj: 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08 1.08
Initial Bse: 0 359      0      0 346      0      0 0 0      0 0 0
Added Vol: 0 0      11      5 0      0      0 0 0      29 0 13
PasserByVol: 0 0      0      0 0      0      0 0 0      0 0 0
Initial Fut: 0 359      11      5 346      0      0 0 0      29 0 13
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 0 359      11      5 346      0      0 0 0      29 0 13
Reduct Vol: 0 0      0      0 0      0      0 0 0      0 0 0
FinalVolume: 0 359      11      5 346      0      0 0 0      29 0 13
-----|-----|-----|-----|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx      4.1 xxxx xxxxx xxxxx xxxx xxxxx      6.4 xxxx 6.2
FollowUpTim:xxxxx xxxx xxxxx      2.2 xxxx xxxxx xxxxx xxxx xxxxx      3.5 xxxx 3.3
-----|-----|-----|-----|
Capacity Module:
Cnflct Vol: xxxx xxxx xxxxx      370 xxxx xxxxx xxxx xxxx xxxxx      714 xxxx 359
Potent Cap.: xxxx xxxx xxxxx      1200 xxxx xxxxx xxxx xxxx xxxxx      401 xxxx 690
Move Cap.: xxxx xxxx xxxxx      1200 xxxx xxxxx xxxx xxxx xxxxx      400 xxxx 690
Volume/Cap: xxxx xxxx xxxxx      0.00 xxxx xxxx xxxx xxxx xxxxx      0.07 xxxx 0.02
-----|-----|-----|-----|
Level Of Service Module:
2Way95thQ: xxxx xxxx xxxxx      0.0 xxxx xxxxx xxxx xxxx xxxxx      0.2 xxxx 0.1
Control Del:xxxxx xxxx xxxxx      8.0 xxxx xxxxx xxxxx xxxx xxxxx      14.7 xxxx 10.3
LOS by Move: * * *      A * *      * * *      B * B
Movement:      LT - LTR - RT      LT - LTR - RT      LT - LTR - RT      LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:      * * *      * * *      * * *      * * *
ApproachDel: xxxxxx      xxxxxx      xxxxxx      13.4
ApproachLOS:      *      *      *      B
*****
Note: Queue reported is the number of cars per lane.
*****

```

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

 Intersection #4 SANTIAGO CANYON RD (NS) @ PROJECT ACCESS (EW)

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: B[14.8]

Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign			
Rights:	Include			Include			Include			Include			
Lanes:	0	0	1	0	1	0	0	0	0	0	1	0	0

Volume Module:												
Base Vol:	0	414	0	0	342	0	0	0	0	0	0	0
Growth Adj:	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
Initial Bse:	0	447	0	0	369	0	0	0	0	0	0	0
Added Vol:	0	0	34	15	0	0	0	0	0	20	0	9
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	447	34	15	369	0	0	0	0	20	0	9
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	447	34	15	369	0	0	0	0	20	0	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	447	34	15	369	0	0	0	0	20	0	9

Critical Gap Module:												
Critical Gp:xxxxx	xxxx	xxxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:xxxxx	xxxx	xxxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3

Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	481	xxxx	xxxxx	xxxx	xxxx	xxxxx	846	xxxx	447
Potent Cap.:	xxxx	xxxx	xxxxx	1092	xxxx	xxxxx	xxxx	xxxx	xxxxx	335	xxxx	616
Move Cap.:	xxxx	xxxx	xxxxx	1092	xxxx	xxxxx	xxxx	xxxx	xxxxx	332	xxxx	616
Volume/Cap:	xxxx	xxxx	xxxx	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	0.06	xxxx	0.01

Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	0.0
Control Del:xxxxx	xxxx	xxxx	xxxxx	8.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	16.6	xxxx	10.9
LOS by Move:	*	*	*	A	*	*	*	*	*	C	*	B
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			14.8		
ApproachLOS:	*			*			*			B		

 Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 SANTIAGO CANYON RD (NS) @ LIVE OAK CANYON RD (EW)

Average Delay (sec/veh): 3.9 Worst Case Level Of Service: C[20.6]

Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign			
Rights:	Include			Include			Include			Include			
Lanes:	0	0	0	1	0	1	0	0	0	0	1	0	0

Volume Module:

Base Vol:	0	290	70	50	440	0	0	0	0	100	0	80
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	290	70	50	440	0	0	0	0	100	0	80
Added Vol:	0	10	0	2	27	0	0	0	0	0	0	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	300	70	52	467	0	0	0	0	100	0	81
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	0	330	77	57	514	0	0	0	0	110	0	89
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	330	77	57	514	0	0	0	0	110	0	89

Critical Gap Module:

Critical Gp:xxxxxx	xxxx	xxxxxx	4.1	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	6.4	xxxx	6.2
FollowUpTim:xxxxxx	xxxx	xxxxxx	2.2	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	3.5	xxxx	3.3

Capacity Module:

Cnflct Vol:	xxxx	xxxx	xxxxxx	407	xxxx	xxxxxx	xxxx	xxxx	xxxxxx	998	xxxx	369
Potent Cap.:	xxxx	xxxx	xxxxxx	1162	xxxx	xxxxxx	xxxx	xxxx	xxxxxx	273	xxxx	681
Move Cap.:	xxxx	xxxx	xxxxxx	1162	xxxx	xxxxxx	xxxx	xxxx	xxxxxx	262	xxxx	681
Volume/Cap:	xxxx	xxxx	xxxx	0.05	xxxx	xxxx	xxxx	xxxx	xxxx	0.42	xxxx	0.13

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxxx	0.2	xxxx	xxxxxx	xxxx	xxxx	xxxxxx	2.0	xxxx	0.4
Control Del:xxxxxx	xxxx	xxxxxx	8.3	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	28.3	xxxx	11.1	
LOS by Move:	*	*	*	A	*	*	*	*	*	D	*	B
Movement:	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	
Shared Cap.:	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx
SharedQueue:xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx
Shrd ConDel:xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	20.6	xxxxxx	xxxxxx
ApproachLOS:	*	*	*	*	*	*	*	*	*	C	*	*

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
*****
Intersection #5 SANTIAGO CANYON RD (NS) @ LIVE OAK CANYON RD (EW)
*****
Average Delay (sec/veh):      3.5      Worst Case Level Of Service: C[ 23.0]
*****
Approach:      North Bound      South Bound      East Bound      West Bound
Movement:      L - T - R      L - T - R      L - T - R      L - T - R
-----|-----|-----|-----|
Control:      Uncontrolled      Uncontrolled      Stop Sign      Stop Sign
Rights:      Include      Include      Include      Include
Lanes:      0 0 0 1 0      1 0 1 0 0      0 0 0 0 0      1 0 0 0 1
-----|-----|-----|-----|
Volume Module:
Base Vol:      0 500 150      90 310 0      0 0 0 0      80 0 70
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 0 500 150 90 310 0 0 0 0 80 0 70
Added Vol: 0 32 0 1 19 0 0 0 0 0 0 2
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 532 150 91 329 0 0 0 0 80 0 72
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 0 532 150 91 329 0 0 0 0 80 0 72
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 532 150 91 329 0 0 0 0 80 0 72
-----|-----|-----|-----|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx 4.1 xxxx xxxxx xxxxx xxxx xxxxx 6.4 xxxx 6.2
FollowUpTim:xxxxx xxxx xxxxx 2.2 xxxx xxxxx xxxxx xxxx xxxxx 3.5 xxxx 3.3
-----|-----|-----|-----|
Capacity Module:
Cnflct Vol: xxxx xxxx xxxxx 682 xxxx xxxxx xxxx xxxx xxxxx 1118 xxxx 607
Potent Cap.: xxxx xxxx xxxxx 920 xxxx xxxxx xxxx xxxx xxxxx 231 xxxx 500
Move Cap.: xxxx xxxx xxxxx 920 xxxx xxxxx xxxx xxxx xxxxx 214 xxxx 500
Volume/Cap: xxxx xxxx xxxxx 0.10 xxxx xxxxx xxxx xxxx xxxxx 0.37 xxxx 0.14
-----|-----|-----|-----|
Level Of Service Module:
2Way95thQ: xxxx xxxx xxxxx 0.3 xxxx xxxxx xxxx xxxx xxxxx 1.6 xxxx 0.5
Control Del:xxxxx xxxx xxxxx 9.3 xxxx xxxxx xxxxx xxxx xxxxx 31.6 xxxx 13.4
LOS by Move: * * * A * * * * * D * B
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS: * * * * * * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx xxxxxx 23.0
ApproachLOS: * * * * C
*****
Note: Queue reported is the number of cars per lane.
*****

```

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 EL TORO RD (NS) @ GLENN RANCH RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.641

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 32 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R

Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Ovl			Include		

Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
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Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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Lanes:	1	0	1	0	0	0	0	0	1	0	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
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	1	0	1	0	0	0	0	0	0	1	0	0
--	---	---	---	---	---	---	---	---	---	---	---	---

	1	0	1	0	0	0	0	0	0	1	0	0
--	---	---	---	---	---	---	---	---	---	---	---	---

	1	0	1	0	0	0	0	0	0	1	0	0
--	---	---	---	---	---	---	---	---	---	---	---	---

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 EL TORO RD (NS) @ GLENN RANCH RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.728

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 95 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	1	1	0	1	0	0	0

Volume Module:

Base Vol:	190	700	0	0	450	160	420	0	130	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	190	700	0	0	450	160	420	0	130	0	0	0
Added Vol:	0	20	0	0	12	7	12	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	190	720	0	0	462	167	432	0	130	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	190	720	0	0	462	167	432	0	111	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	190	720	0	0	462	167	432	0	111	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	190	720	0	0	462	167	432	0	111	0	0	0

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	0.00	1.47	0.53	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1700	1700	0	0	2497	903	1700	0	1700	0	0	0

Capacity Analysis Module:

Vol/Sat:	0.11	0.42	0.00	0.00	0.18	0.19	0.25	0.00	0.07	0.00	0.00	0.00
Crit Moves:	****						****					

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #7 MARGUERITE PKWY (NS) @ EL TORO RD (EW)

Cycle (sec): 100 Critical Vol./Cap. (X): 0.451

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 22 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	1	1	0	1	1	1	2	0	2	0	1
	1	0	1	1	1	1	2	0	2	0	1	0

Volume Module:

Base Vol:	370	10	240	10	10	0	10	190	210	610	460	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	370	10	240	10	10	0	10	190	210	610	460	10
Added Vol:	0	0	2	0	0	0	0	4	0	6	11	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	370	10	242	10	10	0	10	194	210	616	471	10
User Adj:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	370	10	206	10	10	0	10	194	179	616	471	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	370	10	206	10	10	0	10	194	179	616	471	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	370	10	206	10	10	0	10	194	179	616	471	10
OvlAdjVol:	0											

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	1.96	0.04
Final Sat.:	3400	1700	1700	1700	3400	1700	3400	3400	1700	3400	3329	71

Capacity Analysis Module:

Vol/Sat:	0.11	0.01	0.12	0.01	0.00	0.00	0.00	0.06	0.11	0.18	0.14	0.14
OvlAdjV/S:	0.00											
Crit Moves:	****	****						****	****			

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #7 MARGUERITE PKWY (NS) @ EL TORO RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.565

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 27 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	1	1	0	1	1	1	2	0	2	0	1
	1	0	1	1	1	1	2	0	2	0	1	0

Volume Module:

Base Vol:	140	40	580	10	40	10	10	370	420	420	170	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	140	40	580	10	40	10	10	370	420	420	170	10
Added Vol:	0	0	7	0	0	0	0	12	0	4	7	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	140	40	587	10	40	10	10	382	420	424	177	10
User Adj:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	140	40	499	10	40	9	10	382	357	424	177	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	140	40	499	10	40	9	10	382	357	424	177	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	140	40	499	10	40	9	10	382	357	424	177	10
OvlAdjVol:	287											

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	1.89	0.11
Final Sat.:	3400	1700	1700	1700	3400	1700	3400	3400	1700	3400	3218	182

Capacity Analysis Module:

Vol/Sat:	0.04	0.02	0.29	0.01	0.01	0.01	0.00	0.11	0.21	0.12	0.05	0.06
OvlAdjV/S:	0.17											
Crit Moves:	****			****			****			****		

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #8 PORTOLA/SANTA MARGARITA PKWY (NS) & EL TORO RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.692

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 36 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R

Control: Protected Protected Protected Protected

Rights: Include Include Ignore Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 2 0 4 0 1 2 0 3 0 1 1 0 3 0 1

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Volume Module:

Base Vol: 490 1610 20 50 620 370 310 170 300 50 500 260

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 490 1610 20 50 620 370 310 170 300 50 500 260

Added Vol: 0 0 1 1 0 0 0 2 0 2 6 2

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 490 1610 21 51 620 370 310 172 300 52 506 262

User Adj: 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 0.00 1.00 1.00 0.85

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00

PHF Volume: 490 1610 18 51 620 315 310 172 0 52 506 223

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 490 1610 18 51 620 315 310 172 0 52 506 223

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 1.00

FinalVolume: 490 1610 18 51 620 315 310 172 0 52 506 223

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Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Lanes: 2.00 4.00 1.00 2.00 3.00 1.00 1.00 3.00 1.00 1.00 3.00 1.00

Final Sat.: 3400 6800 1700 3400 5100 1700 1700 5100 1700 1700 5100 1700

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Capacity Analysis Module:

Vol/Sat: 0.14 0.24 0.01 0.02 0.12 0.19 0.18 0.03 0.00 0.03 0.10 0.13

Crit Moves: **** **** **** ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #8 PORTOLA/SANTA MARGARITA PKWY (NS) & EL TORO RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 1.040

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	4	0	1		2	0	3	0	1	

Volume Module:

Base Vol:	430	1010	40	400	1260	650	370	430	510	330	570	640
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	430	1010	40	400	1260	650	370	430	510	330	570	640
Added Vol:	0	0	2	2	0	0	0	7	0	1	4	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	430	1010	42	402	1260	650	370	437	510	331	574	641
User Adj:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.00	1.00	1.00	0.85
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	430	1010	36	402	1260	553	370	437	0	331	574	545
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	430	1010	36	402	1260	553	370	437	0	331	574	545
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	430	1010	36	402	1260	553	370	437	0	331	574	545

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	4.00	1.00	2.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3400	6800	1700	3400	5100	1700	1700	5100	1700	1700	5100	1700

Capacity Analysis Module:

Vol/Sat:	0.13	0.15	0.02	0.12	0.25	0.33	0.22	0.09	0.00	0.19	0.11	0.32
Crit Moves:	****					****	****					****

Appendix H

Buildout (Year 2035) Without Project Conditions
Intersection Analysis Worksheets

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 PORTOLA PKWY (NS) @ GLENN RANCH RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.672

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 34 Level Of Service: B

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

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Control: Protected Protected Protected Protected

Rights: Ovl Include Include Ignore

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 2 0 3 0 1 2 0 3 0 1 1 0 1 0 2 0 2 0 1

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Volume Module:

Base Vol: 130 1730 310 450 530 20 60 20 30 450 50 940

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 130 1730 310 450 530 20 60 20 30 450 50 940

Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 130 1730 310 450 530 20 60 20 30 450 50 940

User Adj: 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 1.00 1.00 1.00 0.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00

PHF Volume: 130 1730 264 450 530 17 60 20 30 450 50 0

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 130 1730 264 450 530 17 60 20 30 450 50 0

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00

FinalVolume: 130 1730 264 450 530 17 60 20 30 450 50 0

OvlAdjVol: 38

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Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Lanes: 2.00 3.00 1.00 2.00 3.00 1.00 1.00 1.00 1.00 2.00 2.00 1.00

Final Sat.: 3400 5100 1700 3400 5100 1700 1700 1700 1700 3400 3400 1700

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Capacity Analysis Module:

Vol/Sat: 0.04 0.34 0.16 0.13 0.10 0.01 0.04 0.01 0.02 0.13 0.01 0.00

OvlAdjV/S: 0.02

Crit Moves: **** **** **** ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 PORTOLA PKWY (NS) @ GLENN RANCH RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.725

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 40 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R

Control:	Protected			Protected			Protected			Protected							
Rights:	Ovl			Include			Include			Ignore							
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0					
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0					
Lanes:	2	0	3	0	1	2	0	3	0	1	1	0	2	0	2	0	1

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Volume Module:

Base Vol:	60	860	350	1140	1860	70	70	30	90	400	20	770		
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Initial Bse:	60	860	350	1140	1860	70	70	30	90	400	20	770		
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0		
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0		
Initial Fut:	60	860	350	1140	1860	70	70	30	90	400	20	770		
User Adj:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00	0.00		
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00		
PHF Volume:	60	860	298	1140	1860	60	70	30	90	400	20	0		
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0		
Reduced Vol:	60	860	298	1140	1860	60	70	30	90	400	20	0		
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00		
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00		
FinalVolume:	60	860	298	1140	1860	60	70	30	90	400	20	0		
OvlAdjVol:	97													

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Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	1.00	1.00	2.00	2.00	1.00
Final Sat.:	3400	5100	1700	3400	5100	1700	1700	1700	1700	3400	3400	1700

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Capacity Analysis Module:

Vol/Sat:	0.02	0.17	0.17	0.34	0.36	0.04	0.04	0.02	0.05	0.12	0.01	0.00
OvlAdjV/S:	0.06											

Crit Moves: ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 PORTOLA PKWY (NS) @ SR-S41 RAMPS (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.515

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 24 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R

Control:	Protected			Protected			Protected			Protected		
Rights:	Ignore			Ignore			Ignore			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	3	0	1		2	0	2	0	1	

Volume Module:

Base Vol:	560	910	90	250	560	260	230	0	290	360	0	1840
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	560	910	90	250	560	260	230	0	290	360	0	1840
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	560	910	90	250	560	260	230	0	290	360	0	1840
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	560	910	0	250	560	0	230	0	0	360	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	560	910	0	250	560	0	230	0	0	360	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	560	910	0	250	560	0	230	0	0	360	0	0

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Lanes:	2.00	3.00	1.00	2.00	2.00	1.00	1.00	0.00	1.00	2.00	0.00	1.00
Final Sat.:	3400	5100	1445	3400	3400	1445	1700	0	1445	3400	0	1445

Capacity Analysis Module:

Vol/Sat:	0.16	0.18	0.00	0.07	0.16	0.00	0.14	0.00	0.00	0.11	0.00	0.00
Crit Moves:	****			****			****			****		

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-----
Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
*****
Intersection #2 PORTOLA PKWY (NS) @ SR-S41 RAMPS (EW)
*****
Cycle (sec):          100          Critical Vol./Cap.(X):          0.687
Loss Time (sec):       5          Average Delay (sec/veh):          xxxxxx
Optimal Cycle:         36          Level Of Service:          B
*****
Approach:      North Bound      South Bound      East Bound      West Bound
Movement:      L - T - R      L - T - R      L - T - R      L - T - R
-----|-----|-----|-----|
Control:       Protected      Protected      Protected      Protected
Rights:        Ignore        Ignore        Ignore        Ignore
Min. Green:    0  0  0        0  0  0        0  0  0        0  0  0
Y+R:          4.0  4.0  4.0    4.0  4.0  4.0    4.0  4.0  4.0    4.0  4.0  4.0
Lanes:         2  0  3  0  1    2  0  2  0  1    1  0  0  0  1    2  0  0  0  1
-----|-----|-----|-----|
Volume Module:
Base Vol:      300  880  210  1200 1080  130  190  0  450  170  0  420
Growth Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:   300  880  210  1200 1080  130  190  0  450  170  0  420
Added Vol:     0  0  0  0  0  0  0  0  0  0  0  0
PasserByVol:   0  0  0  0  0  0  0  0  0  0  0  0
Initial Fut:   300  880  210  1200 1080  130  190  0  450  170  0  420
User Adj:      1.00  1.00  0.00  1.00  1.00  0.00  1.00  1.00  0.00  1.00  1.00  0.00
PHF Adj:       1.00  1.00  0.00  1.00  1.00  0.00  1.00  1.00  0.00  1.00  1.00  0.00
PHF Volume:    300  880  0  1200 1080  0  190  0  0  170  0  0
Reduct Vol:    0  0  0  0  0  0  0  0  0  0  0  0
Reduced Vol:   300  880  0  1200 1080  0  190  0  0  170  0  0
PCE Adj:       1.00  1.00  0.00  1.00  1.00  0.00  1.00  1.00  0.00  1.00  1.00  0.00
MLF Adj:       1.00  1.00  0.00  1.00  1.00  0.00  1.00  1.00  0.00  1.00  1.00  0.00
FinalVolume:   300  880  0  1200 1080  0  190  0  0  170  0  0
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:      1700 1700  1700  1700 1700  1700  1700 1700  1700  1700 1700  1700
Adjustment:    1.00  1.00  0.85  1.00  1.00  0.85  1.00  1.00  0.85  1.00  1.00  0.85
Lanes:         2.00  3.00  1.00  2.00  2.00  1.00  1.00  0.00  1.00  2.00  0.00  1.00
Final Sat.:    3400 5100  1445  3400 3400  1445  1700  0  1445  3400  0  1445
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:       0.09 0.17  0.00  0.35 0.32  0.00  0.11 0.00  0.00  0.05 0.00  0.00
Crit Moves:    ****          ****          ****          ****
*****

```

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

 Intersection #3 SANTIAGO CANYON RD (NS) @ MODJESKA GRADE RD (EW)

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: C[18.5]

Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign			
Rights:	Include			Include			Include			Include			
Lanes:	0	0	1	0	0	1	0	0	0	0	1	0	0

Volume Module:

Base Vol:	0	322	10	0	292	0	0	0	0	28	0	0
Growth Adj:	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48
Initial Bse:	0	477	15	0	432	0	0	0	0	41	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	477	15	0	432	0	0	0	0	41	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	477	15	0	432	0	0	0	0	41	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	477	15	0	432	0	0	0	0	41	0	0

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	xxxxx

Capacity Module:

Cnflct Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	909	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	308	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	308	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.13	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.5	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	18.5	xxxx	xxxxx	
LOS by Move:	*	*	*	*	*	*	*	*	*	C	*	*	
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*	
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			18.5			
ApproachLOS:	*			*			*			C			

 Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3 SANTIAGO CANYON RD (NS) @ MODJESKA GRADE RD (EW)

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: C[19.7]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	1	0	1	0	0	0	0	0	1	0

Volume Module:

Base Vol:	0	376	38	2	326	0	0	0	0	16	0	2
Growth Adj:	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48
Initial Bse:	0	556	56	3	482	0	0	0	0	24	0	3
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	556	56	3	482	0	0	0	0	24	0	3
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	556	56	3	482	0	0	0	0	24	0	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	556	56	3	482	0	0	0	0	24	0	3

Critical Gap Module:

Critical Gp:xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2
FollowUpTim:xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3

Capacity Module:

Cnflct Vol:	xxxx	xxxx	xxxxx	613	xxxx	xxxxx	xxxx	xxxx	xxxxx	1045	1045	556
Potent Cap.:	xxxx	xxxx	xxxxx	976	xxxx	xxxxx	xxxx	xxxx	xxxxx	256	231	534
Move Cap.:	xxxx	xxxx	xxxxx	976	xxxx	xxxxx	xxxx	xxxx	xxxxx	255	230	534
Volume/Cap:	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	0.09	0.00	0.01

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:xxxxx	xxxx	xxxx	xxxxx	8.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	271	xxxxx
SharedQueue:xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.3	xxxxx
Shrd ConDel:xxxxx	xxxx	xxxx	xxxxx	8.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	19.7	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	C	*
ApproachDel:	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	19.7		
ApproachLOS:	*	*	*	*	*	*	*	*	*	C		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

 Intersection #5 SANTIAGO CANYON RD (NS) @ LIVE OAK CANYON RD (EW)

Average Delay (sec/veh): 5.0 Worst Case Level Of Service: E[40.5]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	1	0	1	0	0	0	0	1	0	0

Volume Module:

Base Vol:	0	460	80	50	780	0	0	0	0	100	0	80
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	460	80	50	780	0	0	0	0	100	0	80
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	460	80	50	780	0	0	0	0	100	0	80
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	460	80	50	780	0	0	0	0	100	0	80
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	460	80	50	780	0	0	0	0	100	0	80

Critical Gap Module:

Critical Gp:xxxxx	xxxx	xxxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:xxxxx	xxxx	xxxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3

Capacity Module:

Cnflct Vol:	xxxx	xxxx	xxxxx	540	xxxx	xxxxx	xxxx	xxxx	xxxxx	1380	xxxx	500
Potent Cap.:	xxxx	xxxx	xxxxx	1039	xxxx	xxxxx	xxxx	xxxx	xxxxx	161	xxxx	575
Move Cap.:	xxxx	xxxx	xxxxx	1039	xxxx	xxxxx	xxxx	xxxx	xxxxx	155	xxxx	575
Volume/Cap:	xxxx	xxxx	xxxx	0.05	xxxx	xxxx	xxxx	xxxx	xxxx	0.65	xxxx	0.14

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxx	xxxx	xxxxx	3.6	xxxx	0.5
Control Del:xxxxx	xxxx	xxxx	xxxxx	8.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	63.1	xxxx	12.3
LOS by Move:	*	*	*	A	*	*	*	*	*	F	*	B
Movement:	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:xxxxx	xxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:xxxxx	xxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	40.5	xxxxxx	xxxxxx
ApproachLOS:	*	*	*	*	*	*	*	*	*	E	*	*

 Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #5 SANTIAGO CANYON RD (NS) @ LIVE OAK CANYON RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.568

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 27 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R

Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		

Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
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Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	1
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Volume Module:

Base Vol:	0	460	80	50	780	0	0	0	0	100	0	80
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Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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Initial Bse:	0	460	80	50	780	0	0	0	0	100	0	80
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Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
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PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
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Initial Fut:	0	460	80	50	780	0	0	0	0	100	0	80
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User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85
-----------	------	------	------	------	------	------	------	------	------	------	------	------

PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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PHF Volume:	0	460	80	50	780	0	0	0	0	100	0	68
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Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
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Reduced Vol:	0	460	80	50	780	0	0	0	0	100	0	68
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PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
----------	------	------	------	------	------	------	------	------	------	------	------	------

FinalVolume:	0	460	80	50	780	0	0	0	0	100	0	68
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Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
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Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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Lanes:	0.00	0.85	0.15	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
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Final Sat.:	0	1448	252	1700	1700	0	0	0	0	1700	0	1700
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Capacity Analysis Module:

Vol/Sat:	0.00	0.32	0.32	0.03	0.46	0.00	0.00	0.00	0.00	0.06	0.00	0.04
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Crit Moves:	****			****						****		
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Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 SANTIAGO CANYON RD (NS) @ LIVE OAK CANYON RD (EW)

Average Delay (sec/veh): 5.7 Worst Case Level Of Service: F[50.1]

Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign			
Rights:	Include			Include			Include			Include			
Lanes:	0	0	0	1	0	1	0	0	0	0	1	0	0

Volume Module:

Base Vol:	0	760	180	120	410	0	0	0	0	80	0	80
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	760	180	120	410	0	0	0	0	80	0	80
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	760	180	120	410	0	0	0	0	80	0	80
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	760	180	120	410	0	0	0	0	80	0	80
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	760	180	120	410	0	0	0	0	80	0	80

Critical Gap Module:

Critical Gp:xxxxx	xxxx	xxxx	xxxx	4.1	xxxx	xxxx	xxxx	xxxx	xxxx	6.4	xxxx	6.2
FollowUpTim:xxxxx	xxxx	xxxx	xxxx	2.2	xxxx	xxxx	xxxx	xxxx	xxxx	3.5	xxxx	3.3

Capacity Module:

Cnflct Vol:	xxxx	xxxx	xxxx	940	xxxx	xxxx	xxxx	xxxx	xxxx	1500	xxxx	850
Potent Cap.:	xxxx	xxxx	xxxx	737	xxxx	xxxx	xxxx	xxxx	xxxx	136	xxxx	363
Move Cap.:	xxxx	xxxx	xxxx	737	xxxx	xxxx	xxxx	xxxx	xxxx	119	xxxx	363
Volume/Cap:	xxxx	xxxx	xxxx	0.16	xxxx	xxxx	xxxx	xxxx	xxxx	0.67	xxxx	0.22

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxx	0.6	xxxx	xxxx	xxxx	xxxx	xxxx	3.6	xxxx	0.8
Control Del:xxxxx	xxxx	xxxx	xxxx	10.8	xxxx	xxxx	xxxx	xxxx	xxxx	82.5	xxxx	17.7
LOS by Move:	*	*	*	B	*	*	*	*	*	F	*	C
Movement:	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT
Shared Cap.:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
SharedQueue:xxxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Shrd ConDel:xxxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	50.1	xxxxxx	xxxxxx
ApproachLOS:	*	*	*	*	*	*	*	*	*	F	*	*

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #5 SANTIAGO CANYON RD (NS) @ LIVE OAK CANYON RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.721

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 39 Level Of Service: C

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Permitted Permitted Permitted Permitted

Rights: Include Include Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 0 0 0 1 0 1 0 1 0 0 0 0 1 0 0 0 1

Volume Module:

Base Vol: 0 760 180 120 410 0 0 0 0 80 0 80

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 0 760 180 120 410 0 0 0 0 80 0 80

Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 0 760 180 120 410 0 0 0 0 80 0 80

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.85

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 0 760 180 120 410 0 0 0 0 80 0 68

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 0 760 180 120 410 0 0 0 0 80 0 68

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

FinalVolume: 0 760 180 120 410 0 0 0 0 80 0 68

Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Lanes: 0.00 0.81 0.19 1.00 1.00 0.00 0.00 0.00 0.00 1.00 0.00 1.00

Final Sat.: 0 1374 326 1700 1700 0 0 0 0 1700 0 1700

Capacity Analysis Module:

Vol/Sat: 0.00 0.55 0.55 0.07 0.24 0.00 0.00 0.00 0.00 0.05 0.00 0.04

Crit Moves: **** *

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 EL TORO RD (NS) @ GLENN RANCH RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.796

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 51 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	1	1	0	0	0	0	0

Volume Module:

Base Vol:	230	450	0	0	1150	500	180	0	250	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	230	450	0	0	1150	500	180	0	250	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	230	450	0	0	1150	500	180	0	250	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	230	450	0	0	1150	500	180	0	213	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	230	450	0	0	1150	500	180	0	213	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	230	450	0	0	1150	500	180	0	213	0	0	0

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	0.00	1.39	0.61	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1700	1700	0	0	2370	1030	1700	0	1700	0	0	0

Capacity Analysis Module:

Vol/Sat:	0.14	0.26	0.00	0.00	0.49	0.49	0.11	0.00	0.13	0.00	0.00	0.00
Crit Moves:	****				****				****			

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 EL TORO RD (NS) @ GLENN RANCH RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.796

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 51 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	1	1	0	2	0	0	0

Volume Module:

Base Vol:	230	450	0	0	1150	500	180	0	250	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	230	450	0	0	1150	500	180	0	250	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	230	450	0	0	1150	500	180	0	250	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	230	450	0	0	1150	500	180	0	213	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	230	450	0	0	1150	500	180	0	213	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	230	450	0	0	1150	500	180	0	213	0	0	0

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	0.00	1.39	0.61	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1700	1700	0	0	2370	1030	3400	0	1700	0	0	0

Capacity Analysis Module:

Vol/Sat:	0.14	0.26	0.00	0.00	0.49	0.49	0.05	0.00	0.13	0.00	0.00	0.00
Crit Moves:	****				****				****			

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 EL TORO RD (NS) @ GLENN RANCH RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 1.021

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 180 Level Of Service: F

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

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Control: Protected Permitted Split Phase Split Phase

Rights: Include Include Ovl Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 1 0 1 0 0 0 0 1 1 0 1 0 0 0 0 0

-----|-----|-----|-----|

Volume Module:

Base Vol: 180 1100 0 0 550 270 550 0 180 0 0 0

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 180 1100 0 0 550 270 550 0 180 0 0 0

Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 180 1100 0 0 550 270 550 0 180 0 0 0

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.85 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 180 1100 0 0 550 270 550 0 153 0 0 0

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 180 1100 0 0 550 270 550 0 153 0 0 0

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

FinalVolume: 180 1100 0 0 550 270 550 0 153 0 0 0

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Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Lanes: 1.00 1.00 0.00 0.00 1.34 0.66 1.00 0.00 1.00 0.00 0.00

Final Sat.: 1700 1700 0 0 2280 1120 1700 0 1700 0 0

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Capacity Analysis Module:

Vol/Sat: 0.11 0.65 0.00 0.00 0.24 0.24 0.32 0.00 0.09 0.00 0.00

Crit Moves: ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 EL TORO RD (NS) @ GLENN RANCH RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.859

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 180 Level Of Service: D

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

-----|-----|-----|-----|

Control: Protected Permitted Split Phase Split Phase

Rights: Include Include Ovl Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 1 0 1 0 0 0 0 1 1 0 2 0 0 0 1 0 0 0 0 0

-----|-----|-----|-----|

Volume Module:

Base Vol: 180 1100 0 0 550 270 550 0 180 0 0 0

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 180 1100 0 0 550 270 550 0 180 0 0 0

Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 180 1100 0 0 550 270 550 0 180 0 0 0

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.85 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 180 1100 0 0 550 270 550 0 153 0 0 0

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 180 1100 0 0 550 270 550 0 153 0 0 0

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

FinalVolume: 180 1100 0 0 550 270 550 0 153 0 0 0

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Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Lanes: 1.00 1.00 0.00 0.00 1.34 0.66 2.00 0.00 1.00 0.00 0.00 0.00

Final Sat.: 1700 1700 0 0 2280 1120 3400 0 1700 0 0 0

-----|-----|-----|-----|

Capacity Analysis Module:

Vol/Sat: 0.11 0.65 0.00 0.00 0.24 0.24 0.16 0.00 0.09 0.00 0.00 0.00

Crit Moves: **** *

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #7 MARGUERITE PKWY (NS) @ EL TORO RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.571

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 27 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound							
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	L	T	R					
Control:	Split Phase				Split Phase				Protected				Protected							
Rights:	Ovl				Include				Include				Include							
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0					
Lanes:	1	1	1	0	1	1	0	1	1	1	2	0	2	0	1	2	0	1	1	0

Volume Module:

Base Vol:	510	10	580	10	10	0	10	260	170	980	860	10	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Initial Bse:	510	10	580	10	10	0	10	260	170	980	860	10	
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	
Initial Fut:	510	10	580	10	10	0	10	260	170	980	860	10	
User Adj:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PHF Volume:	510	10	493	10	10	0	10	260	145	980	860	10	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	510	10	493	10	10	0	10	260	145	980	860	10	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
FinalVolume:	510	10	493	10	10	0	10	260	145	980	860	10	
OvlAdjVol:	3												

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	1.98	0.02
Final Sat.:	3400	1700	1700	1700	3400	1700	3400	3400	1700	3400	3361	39

Capacity Analysis Module:

Vol/Sat:	0.15	0.01	0.29	0.01	0.00	0.00	0.00	0.08	0.09	0.29	0.26	0.26	
OvlAdjV/S:	0.00												
Crit Moves:	****	****					****	****					

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #7 MARGUERITE PKWY (NS) @ EL TORO RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.787

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 49 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound							
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase				Split Phase				Protected				Protected							
Rights:	Ovl				Include				Include				Include							
Min. Green:	0		0		0	0		0		0	0		0		0	0		0		0
Y+R:	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0
Lanes:	1	1	1	0	1	1	0	1	1	1	2	0	2	0	1	2	0	1	1	0

Volume Module:

Base Vol:	110	40	960	10	40	10	10	730	490	760	270	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	110	40	960	10	40	10	10	730	490	760	270	10
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	110	40	960	10	40	10	10	730	490	760	270	10
User Adj:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	110	40	816	10	40	9	10	730	417	760	270	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	110	40	816	10	40	9	10	730	417	760	270	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	110	40	816	10	40	9	10	730	417	760	270	10
OvlAdjVol:	436											

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	1.93	0.07
Final Sat.:	3400	1700	1700	1700	3400	1700	3400	3400	1700	3400	3279	121

Capacity Analysis Module:

Vol/Sat:	0.03	0.02	0.48	0.01	0.01	0.01	0.00	0.21	0.25	0.22	0.08	0.08
OvlAdjV/S:	0.26											
Crit Moves:	****											

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #8 PORTOLA/SANTA MARGARITA PKWY (NS) & EL TORO RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.905

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 90 Level Of Service: E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	4	0	1		2	0	3	0	1	

Volume Module:

Base Vol:	580	1950	20	70	640	430	450	180	280	60	830	410
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	580	1950	20	70	640	430	450	180	280	60	830	410
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	580	1950	20	70	640	430	450	180	280	60	830	410
User Adj:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.00	1.00	1.00	0.85
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	580	1950	17	70	640	366	450	180	0	60	830	349
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	580	1950	17	70	640	366	450	180	0	60	830	349
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	580	1950	17	70	640	366	450	180	0	60	830	349

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	4.00	1.00	2.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3400	6800	1700	3400	5100	1700	1700	5100	1700	1700	5100	1700

Capacity Analysis Module:

Vol/Sat:	0.17	0.29	0.01	0.02	0.13	0.22	0.26	0.04	0.00	0.04	0.16	0.21
Crit Moves:	****					****	****					****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #8 PORTOLA/SANTA MARGARITA PKWY (NS) & EL TORO RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 1.259

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	4	0	1		2	0	3	0	1	

Volume Module:

Base Vol:	410	1150	50	590	1700	850	490	670	490	340	600	750
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	410	1150	50	590	1700	850	490	670	490	340	600	750
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	410	1150	50	590	1700	850	490	670	490	340	600	750
User Adj:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.00	1.00	1.00	0.85
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	410	1150	43	590	1700	723	490	670	0	340	600	638
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	410	1150	43	590	1700	723	490	670	0	340	600	638
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	410	1150	43	590	1700	723	490	670	0	340	600	638

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	4.00	1.00	2.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3400	6800	1700	3400	5100	1700	1700	5100	1700	1700	5100	1700

Capacity Analysis Module:

Vol/Sat:	0.12	0.17	0.03	0.17	0.33	0.43	0.29	0.13	0.00	0.20	0.12	0.38
Crit Moves:	****					****	****					****

Appendix I

Buildout (Year 2035) With Project Conditions
Intersection Analysis Worksheets

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 PORTOLA PKWY (NS) @ GLENN RANCH RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.674

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 35 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	3	0	1		2	0	3	0	1	

Volume Module:

Base Vol:	130	1730	310	450	530	20	60	20	30	450	50	940
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	130	1730	310	450	530	20	60	20	30	450	50	940
Added Vol:	0	0	3	1	0	0	0	0	0	8	0	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	130	1730	313	451	530	20	60	20	30	458	50	942
User Adj:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	130	1730	266	451	530	17	60	20	30	458	50	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	130	1730	266	451	530	17	60	20	30	458	50	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	130	1730	266	451	530	17	60	20	30	458	50	0
OvlAdjVol:	37											

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	3.00	1.00	1.00	1.00	1.00	2.00	2.00	1.00
Final Sat.:	3400	5100	1700	3400	5100	1700	1700	1700	1700	3400	3400	1700

Capacity Analysis Module:

Vol/Sat:	0.04	0.34	0.16	0.13	0.10	0.01	0.04	0.01	0.02	0.13	0.01	0.00
OvlAdjV/S:	0.02											
Crit Moves:	****			****			****			****		

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 PORTOLA PKWY (NS) @ GLENN RANCH RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.727

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 40 Level Of Service: C

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Protected Protected Protected Protected

Rights: Ovl Include Include Ignore

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Lanes: 2 0 3 0 1 2 0 3 0 1 1 0 1 1 0 2 0 2 0 1

Volume Module:

Base Vol: 60 860 350 1140 1860 70 70 30 90 400 20 770

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 60 860 350 1140 1860 70 70 30 90 400 20 770

Added Vol: 0 0 10 2 0 0 0 0 0 0 6 0 1

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 60 860 360 1142 1860 70 70 30 90 406 20 771

User Adj: 1.00 1.00 0.85 1.00 1.00 0.85 1.00 1.00 1.00 1.00 1.00 0.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00

PHF Volume: 60 860 306 1142 1860 60 70 30 90 406 20 0

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 60 860 306 1142 1860 60 70 30 90 406 20 0

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00

FinalVolume: 60 860 306 1142 1860 60 70 30 90 406 20 0

OvlAdjVol: 103

Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Lanes: 2.00 3.00 1.00 2.00 3.00 1.00 1.00 1.00 1.00 2.00 2.00 1.00

Final Sat.: 3400 5100 1700 3400 5100 1700 1700 1700 1700 3400 3400 1700

Capacity Analysis Module:

Vol/Sat: 0.02 0.17 0.18 0.34 0.36 0.04 0.04 0.02 0.05 0.12 0.01 0.00

OvlAdjV/S: 0.06

Crit Moves: **** **** **** ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 PORTOLA PKWY (NS) @ SR-S41 RAMPS (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.516

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 24 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ignore			Ignore			Ignore			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	3	0	1		2	0	2	0	1	

Volume Module:

Base Vol:	560	910	90	250	560	260	230	0	290	360	0	1840
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	560	910	90	250	560	260	230	0	290	360	0	1840
Added Vol:	0	0	2	0	0	8	3	0	0	1	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	560	910	92	250	560	268	233	0	290	361	0	1840
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	560	910	0	250	560	0	233	0	0	361	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	560	910	0	250	560	0	233	0	0	361	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	560	910	0	250	560	0	233	0	0	361	0	0

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	2.00	1.00	1.00	0.00	1.00	2.00	0.00	1.00
Final Sat.:	3400	5100	1700	3400	3400	1700	1700	0	1700	3400	0	1700

Capacity Analysis Module:

Vol/Sat:	0.16	0.18	0.00	0.07	0.16	0.00	0.14	0.00	0.00	0.11	0.00	0.00
Crit Moves:	****			****			****			****		

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 PORTOLA PKWY (NS) @ SR-S41 RAMPS (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.693

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 36 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound					
Movement:	L	T	R	L	T	R	L	T	R	L	T	R			
Control:	Protected			Protected			Protected			Protected					
Rights:	Ignore			Ignore			Ignore			Ignore					
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0			
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Lanes:	2	0	3	0	1	2	0	2	0	1	1	0	0	0	1

Volume Module:

Base Vol:	300	880	210	1200	1080	130	190	0	450	170	0	420
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	300	880	210	1200	1080	130	190	0	450	170	0	420
Added Vol:	0	0	1	0	0	6	10	0	0	2	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	300	880	211	1200	1080	136	200	0	450	172	0	420
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	300	880	0	1200	1080	0	200	0	0	172	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	300	880	0	1200	1080	0	200	0	0	172	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	300	880	0	1200	1080	0	200	0	0	172	0	0

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	3.00	1.00	2.00	2.00	1.00	1.00	0.00	1.00	2.00	0.00	1.00
Final Sat.:	3400	5100	1700	3400	3400	1700	1700	0	1700	3400	0	1700

Capacity Analysis Module:

Vol/Sat:	0.09	0.17	0.00	0.35	0.32	0.00	0.12	0.00	0.00	0.05	0.00	0.00
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3 SANTIAGO CANYON RD (NS) @ MODJESKA GRADE RD (EW)

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: C[18.9]

Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign			
Rights:	Include			Include			Include			Include			
Lanes:	0	0	1	0	0	1	0	0	0	0	1	0	0

Volume Module:

Base Vol:	0	322	10	0	292	0	0	0	0	28	0	0
Growth Adj:	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48
Initial Bse:	0	477	15	0	432	0	0	0	0	41	0	0
Added Vol:	0	13	0	0	5	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	490	15	0	437	0	0	0	0	41	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	490	15	0	437	0	0	0	0	41	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	490	15	0	437	0	0	0	0	41	0	0

Critical Gap Module:

Critical Gp:	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxxx	xxxxxx	xxxxxx	xxxxx	xxxxxx	6.4	xxxxx	xxxxxx
FollowUpTim:	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxxx	xxxxxx	xxxxxx	xxxxx	xxxxxx	3.5	xxxxx	xxxxxx

Capacity Module:

Cnflct Vol:	xxxxx	xxxxx	xxxxxx	xxxxx	xxxxx	xxxxxx	xxxxx	xxxxx	xxxxxx	927	xxxxx	xxxxxx
Potent Cap.:	xxxxx	xxxxx	xxxxxx	xxxxx	xxxxx	xxxxxx	xxxxx	xxxxx	xxxxxx	300	xxxxx	xxxxxx
Move Cap.:	xxxxx	xxxxx	xxxxxx	xxxxx	xxxxx	xxxxxx	xxxxx	xxxxx	xxxxxx	300	xxxxx	xxxxxx
Volume/Cap:	xxxxx	xxxxx	xxxxxx	xxxxx	xxxxx	xxxxxx	xxxxx	xxxxx	xxxxxx	0.14	xxxxx	xxxxxx

Level Of Service Module:

2Way95thQ:	xxxxx	xxxxx	xxxxxx	xxxxx	xxxxx	xxxxxx	xxxxx	xxxxx	xxxxxx	0.5	xxxxx	xxxxxx
Control Del:	xxxxxx	xxxxx	xxxxxx	xxxxxx	xxxxx	xxxxxx	xxxxxx	xxxxx	xxxxxx	18.9	xxxxx	xxxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	C	*	*
Movement:	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT			
Shared Cap.:	xxxxx	xxxxx	xxxxxx	xxxxx	xxxxx	xxxxxx	xxxxx	xxxxx	xxxxxx	xxxxx	xxxxx	xxxxxx
SharedQueue:	xxxxxx	xxxxx	xxxxxx	xxxxxx	xxxxx	xxxxxx	xxxxxx	xxxxx	xxxxxx	xxxxxx	xxxxx	xxxxxx
Shrd ConDel:	xxxxxx	xxxxx	xxxxxx	xxxxxx	xxxxx	xxxxxx	xxxxxx	xxxxx	xxxxxx	xxxxxx	xxxxx	xxxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxxx			xxxxxxx			xxxxxxx			18.9		
ApproachLOS:	*			*			*			C		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3 SANTIAGO CANYON RD (NS) @ MODJESKA GRADE RD (EW)

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: C[20.3]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	1	0	1	0	0	0	0	0	1	0

Volume Module:

Base Vol:	0	376	38	2	326	0	0	0	0	16	0	2
Growth Adj:	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48
Initial Bse:	0	556	56	3	482	0	0	0	0	24	0	3
Added Vol:	0	9	0	0	15	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	565	56	3	497	0	0	0	0	24	0	3
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	565	56	3	497	0	0	0	0	24	0	3
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	565	56	3	497	0	0	0	0	24	0	3

Critical Gap Module:

Critical Gp:xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2
FollowUpTim:xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3

Capacity Module:

Cnflct Vol:	xxxx	xxxx	xxxxx	622	xxxx	xxxxx	xxxx	xxxx	xxxxx	1069	1069	565
Potent Cap.:	xxxx	xxxx	xxxxx	969	xxxx	xxxxx	xxxx	xxxx	xxxxx	247	223	528
Move Cap.:	xxxx	xxxx	xxxxx	969	xxxx	xxxxx	xxxx	xxxx	xxxxx	247	223	528
Volume/Cap:	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	0.10	0.00	0.01

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:xxxxx	xxxx	xxxx	xxxxx	8.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	262	xxxxx
SharedQueue:xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.3	xxxxx
Shrd ConDel:xxxxx	xxxx	xxxx	xxxxx	8.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	20.3	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	C	*
ApproachDel:	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	20.3	xxxxxx
ApproachLOS:	*	*	*	*	*	*	*	*	*	*	C	*

Note: Queue reported is the number of cars per lane.

```

-----
Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
*****
Intersection #4 SANTIAGO CANYON RD (NS) @ PROJECT ACCESS (EW)
*****
Average Delay (sec/veh):      0.7      Worst Case Level Of Service: C[ 16.8]
*****
Approach:      North Bound      South Bound      East Bound      West Bound
Movement:      L - T - R      L - T - R      L - T - R      L - T - R
-----
Control:      Uncontrolled      Uncontrolled      Stop Sign      Stop Sign
Rights:      Include      Include      Include      Include
Lanes:      0 0 1 0 1      1 0 1 0 0      0 0 0 0 0      1 0 0 0 1
-----
Volume Module:
Base Vol:      0 332      0 0 320      0 0 0 0 0      0 0 0 0
Growth Adj: 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48
Initial Bse: 0 491      0 0 474      0 0 0 0 0      0 0 0 0
Added Vol: 0 0 11      5 0 0 0 0 0 0 29 0 13
PasserByVol: 0 0 0      0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 491 11      5 474 0 0 0 0 29 0 13
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 0 491 11      5 474 0 0 0 0 29 0 13
Reduct Vol: 0 0 0      0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 491 11      5 474 0 0 0 0 29 0 13
-----
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx 4.1 xxxx xxxxx xxxxx xxxx xxxxx 6.4 xxxx 6.2
FollowUpTim:xxxxx xxxx xxxxx 2.2 xxxx xxxxx xxxxx xxxx xxxxx 3.5 xxxx 3.3
-----
Capacity Module:
Cnflct Vol: xxxx xxxx xxxxx 502 xxxx xxxxx xxxx xxxx xxxxx 975 xxxx 491
Potent Cap.: xxxx xxxx xxxxx 1072 xxxx xxxxx xxxx xxxx xxxxx 281 xxxx 581
Move Cap.: xxxx xxxx xxxxx 1072 xxxx xxxxx xxxx xxxx xxxxx 280 xxxx 581
Volume/Cap: xxxx xxxx xxxxx 0.00 xxxx xxxx xxxx xxxx xxxxx 0.10 xxxx 0.02
-----
Level Of Service Module:
2Way95thQ: xxxx xxxx xxxxx 0.0 xxxx xxxxx xxxx xxxx xxxxx 0.3 xxxx 0.1
Control Del:xxxxx xxxx xxxxx 8.4 xxxx xxxxx xxxxx xxxx xxxxx 19.3 xxxx 11.3
LOS by Move: * * * A * * * * * C * B
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS: * * * * * * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx xxxxxx 16.8
ApproachLOS: * * * C
*****
Note: Queue reported is the number of cars per lane.
*****

```

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 SANTIAGO CANYON RD (NS) @ PROJECT ACCESS (EW)

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: C[19.8]

Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign			
Rights:	Include			Include			Include			Include			
Lanes:	0	0	1	0	1	0	0	0	0	0	1	0	0

Volume Module:

Base Vol:	0	414	0	0	342	0	0	0	0	0	0	0
Growth Adj:	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48
Initial Bse:	0	613	0	0	506	0	0	0	0	0	0	0
Added Vol:	0	0	34	15	0	0	0	0	0	20	0	9
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	613	34	15	506	0	0	0	0	20	0	9
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	613	34	15	506	0	0	0	0	20	0	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	613	34	15	506	0	0	0	0	20	0	9

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3

Capacity Module:

Cnflct Vol:	xxxx	xxxx	xxxxx	647	xxxx	xxxxx	xxxx	xxxx	xxxxx	1149	xxxx	613
Potent Cap.:	xxxx	xxxx	xxxxx	948	xxxx	xxxxx	xxxx	xxxx	xxxxx	222	xxxx	496
Move Cap.:	xxxx	xxxx	xxxxx	948	xxxx	xxxxx	xxxx	xxxx	xxxxx	219	xxxx	496
Volume/Cap:	xxxx	xxxx	xxxx	0.02	xxxx	xxxx	xxxx	xxxx	xxxx	0.09	xxxx	0.02

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.3	xxxx	0.1
Control Del:	xxxxx	xxxx	xxxxx	8.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx	23.1	xxxx	12.4
LOS by Move:	*	*	*	A	*	*	*	*	*	C	*	B
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			19.8		
ApproachLOS:	*			*			*			C		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 SANTIAGO CANYON RD (NS) @ LIVE OAK CANYON RD (EW)

Average Delay (sec/veh): 5.4 Worst Case Level Of Service: E[44.9]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	0	1	0	0	0	0	0	0	0	1

Volume Module:

Base Vol:	0	460	80	50	780	0	0	0	0	100	0	80
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	460	80	50	780	0	0	0	0	100	0	80
Added Vol:	0	10	0	2	27	0	0	0	0	0	0	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	470	80	52	807	0	0	0	0	100	0	81
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	470	80	52	807	0	0	0	0	100	0	81
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Volume:	0	470	80	52	807	0	0	0	0	100	0	81

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3

Capacity Module:

Cnflict Vol:	xxxx	xxxx	xxxxx	550	xxxx	xxxxx	xxxx	xxxx	xxxxx	1421	xxxx	510
Potent Cap.:	xxxx	xxxx	xxxxx	1030	xxxx	xxxxx	xxxx	xxxx	xxxxx	152	xxxx	567
Move Cap.:	xxxx	xxxx	xxxxx	1030	xxxx	xxxxx	xxxx	xxxx	xxxxx	146	xxxx	567
Volume/Cap:	xxxx	xxxx	xxxx	0.05	xxxx	xxxx	xxxx	xxxx	xxxxx	0.69	xxxx	0.14

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxx	xxxx	xxxxx	3.9	xxxx	0.5
Control Del:	xxxxx	xxxx	xxxxx	8.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	71.2	xxxx	12.4
LOS by Move:	*	*	*	A	*	*	*	*	*	F	*	B
Movement:	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			44.9		
ApproachLOS:	*			*			*			E		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #5 SANTIAGO CANYON RD (NS) @ LIVE OAK CANYON RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.584

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 28 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	1	0	0	0	0	0	0	0	1

Volume Module:

Base Vol:	0	460	80	50	780	0	0	0	0	100	0	80
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	460	80	50	780	0	0	0	0	100	0	80
Added Vol:	0	10	0	2	27	0	0	0	0	0	0	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	470	80	52	807	0	0	0	0	100	0	81
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	470	80	52	807	0	0	0	0	100	0	69
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	470	80	52	807	0	0	0	0	100	0	69
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	470	80	52	807	0	0	0	0	100	0	69

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.85	0.15	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	0	1453	247	1700	1700	0	0	0	0	1700	0	1700

Capacity Analysis Module:

Vol/Sat:	0.00	0.32	0.32	0.03	0.47	0.00	0.00	0.00	0.00	0.06	0.00	0.04
Crit Moves:	****			****						****		

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
*****
Intersection #5 SANTIAGO CANYON RD (NS) @ LIVE OAK CANYON RD (EW)
*****
Average Delay (sec/veh):      6.3      Worst Case Level Of Service: F[ 57.4]
*****
Approach:      North Bound      South Bound      East Bound      West Bound
Movement:      L - T - R      L - T - R      L - T - R      L - T - R
-----
Control:      Uncontrolled      Uncontrolled      Stop Sign      Stop Sign
Rights:      Include      Include      Include      Include
Lanes:      0 0 0 1 0      1 0 1 0 0      0 0 0 0 0      1 0 0 0 1
-----
Volume Module:
Base Vol:      0 760 180 120 410 0 0 0 0 80 0 80
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 0 760 180 120 410 0 0 0 0 80 0 80
Added Vol: 0 32 0 1 19 0 0 0 0 0 0 2
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 792 180 121 429 0 0 0 0 80 0 82
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 0 792 180 121 429 0 0 0 0 80 0 82
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 792 180 121 429 0 0 0 0 80 0 82
-----
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx 4.1 xxxx xxxxx xxxxx xxxx xxxxx 6.4 xxxx 6.2
FollowUpTim:xxxxx xxxx xxxxx 2.2 xxxx xxxxx xxxxx xxxx xxxxx 3.5 xxxx 3.3
-----
Capacity Module:
Cnflct Vol: xxxx xxxx xxxxx 972 xxxx xxxxx xxxx xxxx xxxxx 1553 xxxx 882
Potent Cap.: xxxx xxxx xxxxx 717 xxxx xxxxx xxxx xxxx xxxxx 126 xxxx 348
Move Cap.: xxxx xxxx xxxxx 717 xxxx xxxxx xxxx xxxx xxxxx 110 xxxx 348
Volume/Cap: xxxx xxxx xxxxx 0.17 xxxx xxxxx xxxx xxxx xxxxx 0.73 xxxx 0.24
-----
Level Of Service Module:
2Way95thQ: xxxx xxxx xxxxx 0.6 xxxx xxxxx xxxx xxxx xxxxx 3.9 xxxx 0.9
Control Del:xxxxx xxxx xxxxx 11.0 xxxx xxxxx xxxxx xxxx xxxxx 97.2 xxxx 18.5
LOS by Move: * * * B * * * * * F * C
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS: * * * * * * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx xxxxxx 57.4
ApproachLOS: * * * F
*****
Note: Queue reported is the number of cars per lane.
*****

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Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #5 SANTIAGO CANYON RD (NS) @ LIVE OAK CANYON RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.740

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 42 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	1	0	0	0	0	0	0	0	1

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	0	760	180	120	410	0	0	0	0	80	0	80
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	760	180	120	410	0	0	0	0	80	0	80
Added Vol:	0	32	0	1	19	0	0	0	0	0	0	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	792	180	121	429	0	0	0	0	80	0	82
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	792	180	121	429	0	0	0	0	80	0	70
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	792	180	121	429	0	0	0	0	80	0	70
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	792	180	121	429	0	0	0	0	80	0	70

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.81	0.19	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	0	1385	315	1700	1700	0	0	0	0	1700	0	1700

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.00	0.57	0.07	0.25	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.04
Crit Moves:	****		****							****		

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 EL TORO RD (NS) @ GLENN RANCH RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.804

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 53 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	1	1	0	1	0	0	0

Volume Module:

Base Vol:	230	450	0	0	1150	500	180	0	250	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	230	450	0	0	1150	500	180	0	250	0	0	0
Added Vol:	0	6	0	0	17	11	4	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	230	456	0	0	1167	511	184	0	250	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	230	456	0	0	1167	511	184	0	213	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	230	456	0	0	1167	511	184	0	213	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	230	456	0	0	1167	511	184	0	213	0	0	0

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	0.00	1.39	0.61	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1700	1700	0	0	2365	1035	1700	0	1700	0	0	0

Capacity Analysis Module:

Vol/Sat:	0.14	0.27	0.00	0.00	0.49	0.49	0.11	0.00	0.13	0.00	0.00	0.00
Crit Moves:	****				****				****			

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 EL TORO RD (NS) @ GLENN RANCH RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.804

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 53 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	1	1	0	2	0	0	0

Volume Module:

Base Vol:	230	450	0	0	1150	500	180	0	250	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	230	450	0	0	1150	500	180	0	250	0	0	0
Added Vol:	0	6	0	0	17	11	4	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	230	456	0	0	1167	511	184	0	250	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	230	456	0	0	1167	511	184	0	213	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	230	456	0	0	1167	511	184	0	213	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	230	456	0	0	1167	511	184	0	213	0	0	0

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	0.00	1.39	0.61	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1700	1700	0	0	2365	1035	3400	0	1700	0	0	0

Capacity Analysis Module:

Vol/Sat:	0.14	0.27	0.00	0.00	0.49	0.49	0.05	0.00	0.13	0.00	0.00	0.00
Crit Moves:	****			****			****					

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 EL TORO RD (NS) @ GLENN RANCH RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 1.039

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	1	1	0	1	0	0	0

Volume Module:

Base Vol:	180	1100	0	0	550	270	550	0	180	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	180	1100	0	0	550	270	550	0	180	0	0	0
Added Vol:	0	20	0	0	12	7	12	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	180	1120	0	0	562	277	562	0	180	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	180	1120	0	0	562	277	562	0	153	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	180	1120	0	0	562	277	562	0	153	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	180	1120	0	0	562	277	562	0	153	0	0	0

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	0.00	1.34	0.66	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1700	1700	0	0	2277	1123	1700	0	1700	0	0	0

Capacity Analysis Module:

Vol/Sat:	0.11	0.66	0.00	0.00	0.25	0.25	0.33	0.00	0.09	0.00	0.00	0.00
Crit Moves:	****			****								

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 EL TORO RD (NS) @ GLENN RANCH RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.874

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 180 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:	Include			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	1	1	0	2	0	0	0

Volume Module:

Base Vol:	180	1100	0	0	550	270	550	0	180	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	180	1100	0	0	550	270	550	0	180	0	0	0
Added Vol:	0	20	0	0	12	7	12	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	180	1120	0	0	562	277	562	0	180	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	180	1120	0	0	562	277	562	0	153	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	180	1120	0	0	562	277	562	0	153	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	180	1120	0	0	562	277	562	0	153	0	0	0

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	0.00	1.34	0.66	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1700	1700	0	0	2277	1123	3400	0	1700	0	0	0

Capacity Analysis Module:

Vol/Sat:	0.11	0.66	0.00	0.00	0.25	0.25	0.17	0.00	0.09	0.00	0.00	0.00
Crit Moves:	****						****					

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #7 MARGUERITE PKWY (NS) @ EL TORO RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.574

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 27 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	1	1	0	1	1	1	2	0	2	0	1

Volume Module:

Base Vol:	510	10	580	10	10	0	10	260	170	980	860	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	510	10	580	10	10	0	10	260	170	980	860	10
Added Vol:	0	0	2	0	0	0	0	4	0	6	11	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	510	10	582	10	10	0	10	264	170	986	871	10
User Adj:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	510	10	495	10	10	0	10	264	145	986	871	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	510	10	495	10	10	0	10	264	145	986	871	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	510	10	495	10	10	0	10	264	145	986	871	10
OvlAdjVol:	2											

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	1.98	0.02
Final Sat.:	3400	1700	1700	1700	3400	1700	3400	3400	1700	3400	3361	39

Capacity Analysis Module:

Vol/Sat:	0.15	0.01	0.29	0.01	0.00	0.00	0.00	0.08	0.09	0.29	0.26	0.26
OvlAdjV/S:	0.00											
Crit Moves:	****	****			****			****				

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #7 MARGUERITE PKWY (NS) @ EL TORO RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.790

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 50 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	1	0	1	0	1	1	2	0	2	0	1

Volume Module:

Base Vol:	110	40	960	10	40	10	10	730	490	760	270	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	110	40	960	10	40	10	10	730	490	760	270	10
Added Vol:	0	0	7	0	0	0	0	12	0	4	7	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	110	40	967	10	40	10	10	742	490	764	277	10
User Adj:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	110	40	822	10	40	9	10	742	417	764	277	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	110	40	822	10	40	9	10	742	417	764	277	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	110	40	822	10	40	9	10	742	417	764	277	10
OvlAdjVol:	440											

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	1.93	0.07
Final Sat.:	3400	1700	1700	1700	3400	1700	3400	3400	1700	3400	3282	118

Capacity Analysis Module:

Vol/Sat:	0.03	0.02	0.48	0.01	0.01	0.01	0.00	0.22	0.25	0.22	0.08	0.08
OvlAdjV/S:	0.26											
Crit Moves:	****			****			****			****		

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #8 PORTOLA/SANTA MARGARITA PKWY (NS) & EL TORO RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.906

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 90 Level Of Service: E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	4	0	1		2	0	3	0	1	

Volume Module:

Base Vol:	580	1950	20	70	640	430	450	180	280	60	830	410
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	580	1950	20	70	640	430	450	180	280	60	830	410
Added Vol:	0	0	1	1	0	0	0	2	0	2	6	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	580	1950	21	71	640	430	450	182	280	62	836	412
User Adj:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.00	1.00	1.00	0.85
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	580	1950	18	71	640	366	450	182	0	62	836	350
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	580	1950	18	71	640	366	450	182	0	62	836	350
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	580	1950	18	71	640	366	450	182	0	62	836	350

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	4.00	1.00	2.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3400	6800	1700	3400	5100	1700	1700	5100	1700	1700	5100	1700

Capacity Analysis Module:

Vol/Sat:	0.17	0.29	0.01	0.02	0.13	0.22	0.26	0.04	0.00	0.04	0.16	0.21
Crit Moves:	****					****	****					****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #8 PORTOLA/SANTA MARGARITA PKWY (NS) & EL TORO RD (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 1.259

Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx

Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	4	0	1		2	0	3	0	1	
	1	0	3	0	1		1	0	3	0	1	

Volume Module:

Base Vol:	410	1150	50	590	1700	850	490	670	490	340	600	750
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	410	1150	50	590	1700	850	490	670	490	340	600	750
Added Vol:	0	0	2	2	0	0	0	7	0	1	4	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	410	1150	52	592	1700	850	490	677	490	341	604	751
User Adj:	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.00	1.00	1.00	0.85
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	410	1150	44	592	1700	723	490	677	0	341	604	638
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	410	1150	44	592	1700	723	490	677	0	341	604	638
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	410	1150	44	592	1700	723	490	677	0	341	604	638

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	4.00	1.00	2.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3400	6800	1700	3400	5100	1700	1700	5100	1700	1700	5100	1700

Capacity Analysis Module:

Vol/Sat:	0.12	0.17	0.03	0.17	0.33	0.43	0.29	0.13	0.00	0.20	0.12	0.38
Crit Moves:	****					****	****					****

Appendix J

Traffic Signal Warrant Analysis

WARRANT 3, PEAK HOUR (70% FACTOR) (Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (AM)**

Major Street Name = **SANTIAGO CYN RD**

Total of Both Approaches (VPH) = **614**

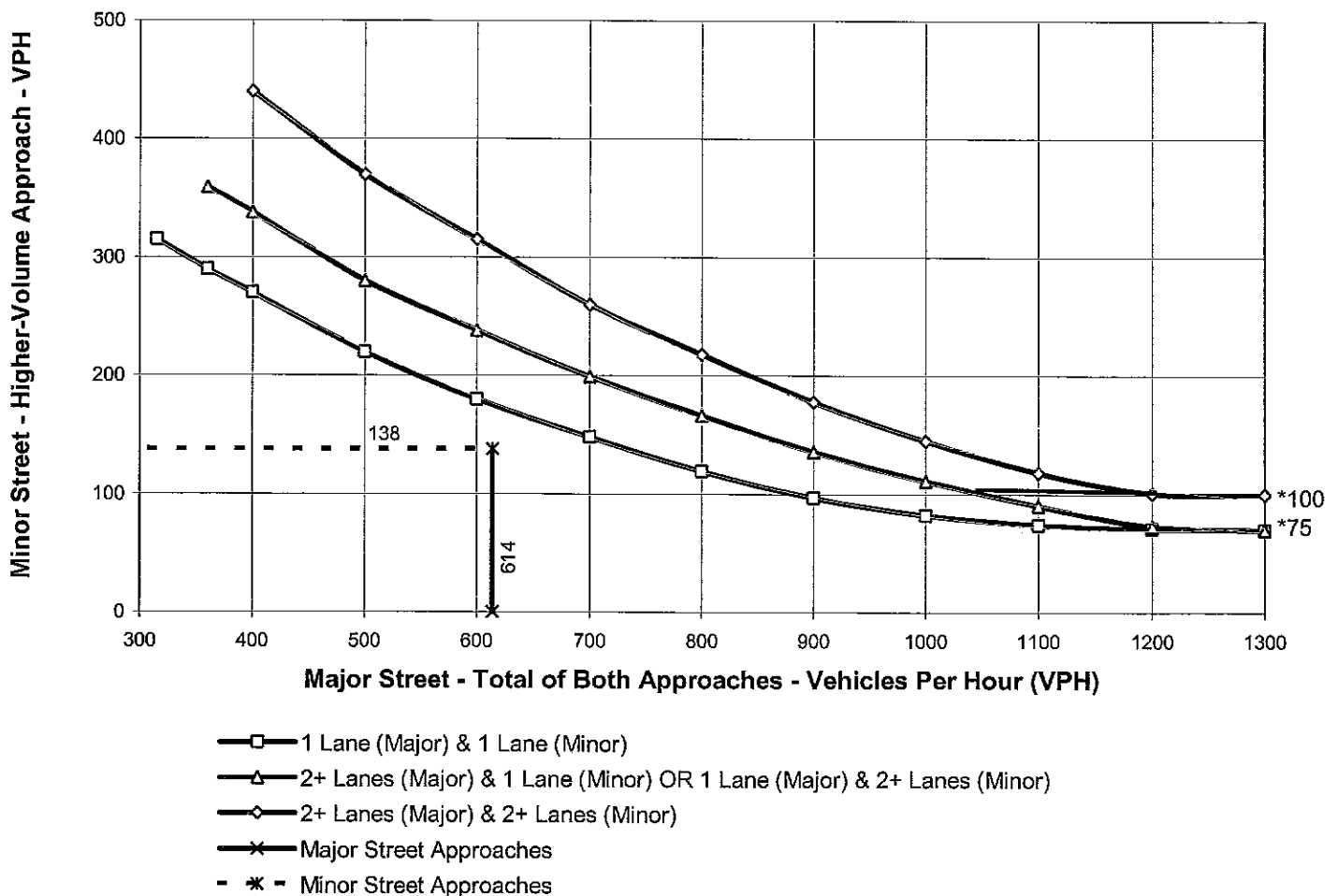
Number of Approach Lanes Major Street = **1**

Minor Street Name = **LIVE OAK CYN RD**

High Volume Approach (VPH) = **138**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

WARRANT 3, PEAK HOUR (70% FACTOR) (Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING PLUS PROJECT (AM)**

Major Street Name = **SANTIAGO CYN RD**

Total of Both Approaches (VPH) = **653**

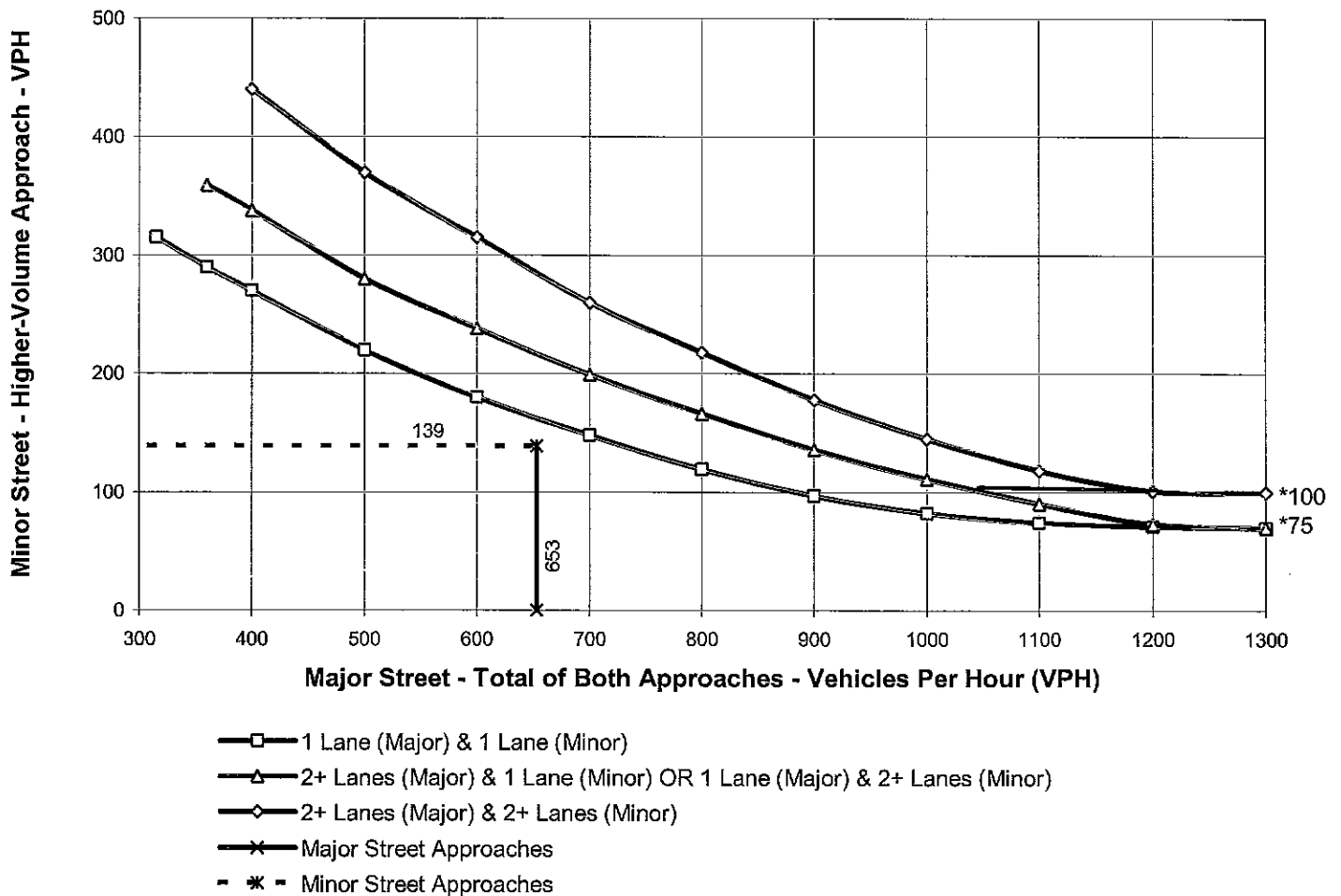
Number of Approach Lanes Major Street = **1**

Minor Street Name = **LIVE OAK CYN RD**

High Volume Approach (VPH) = **139**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

WARRANT 3, PEAK HOUR (70% FACTOR) (Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **INTERIM (YEAR 2015) WITHOUT PROJECT (AM)**

Major Street Name = **SANTIAGO CYN RD**

Total of Both Approaches (VPH) = **850**

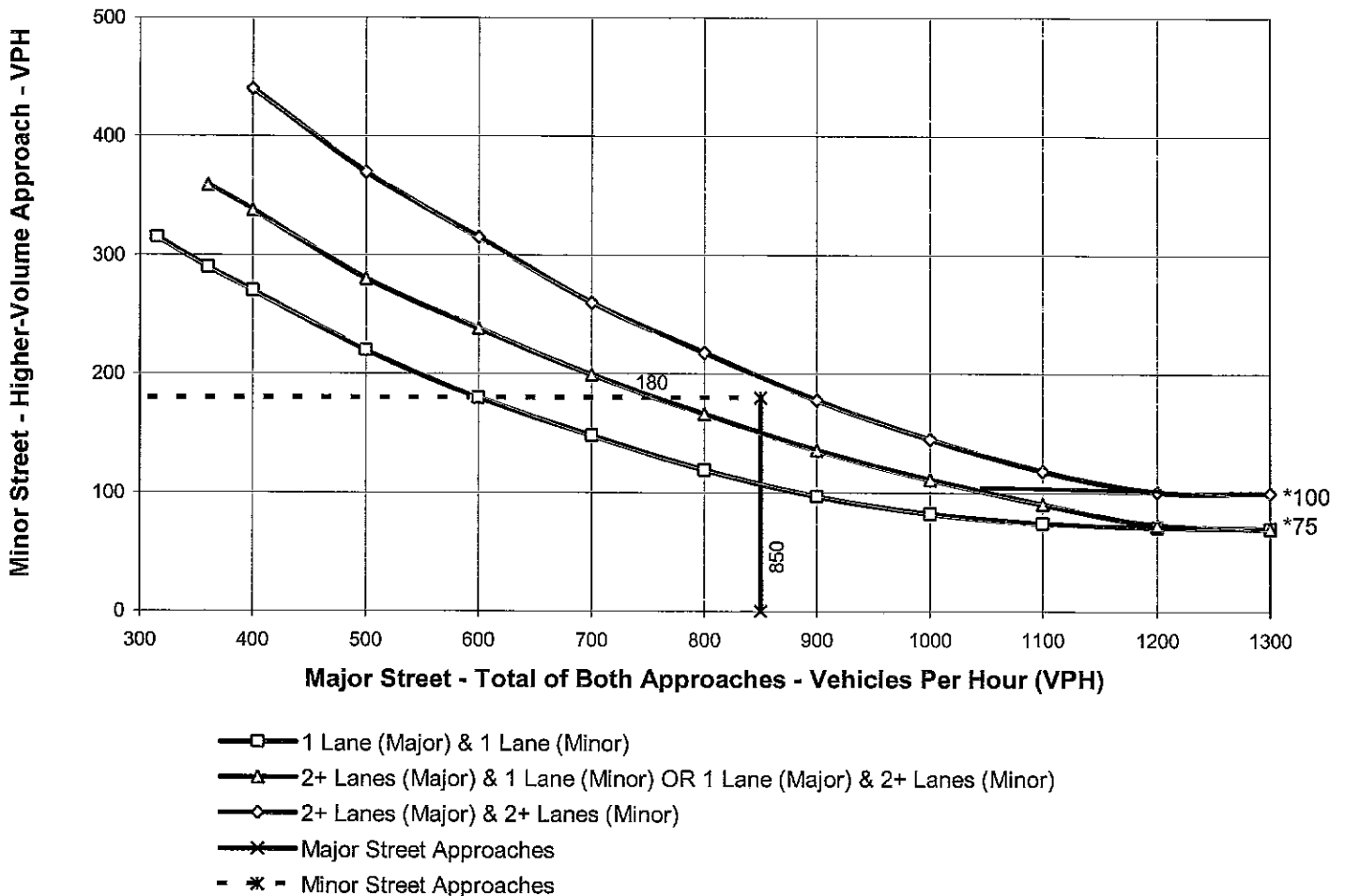
Number of Approach Lanes Major Street = **1**

Minor Street Name = **LIVE OAK CYN RD**

High Volume Approach (VPH) = **180**

Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



* Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

WARRANT 3, PEAK HOUR (70% FACTOR) (Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (PM)**

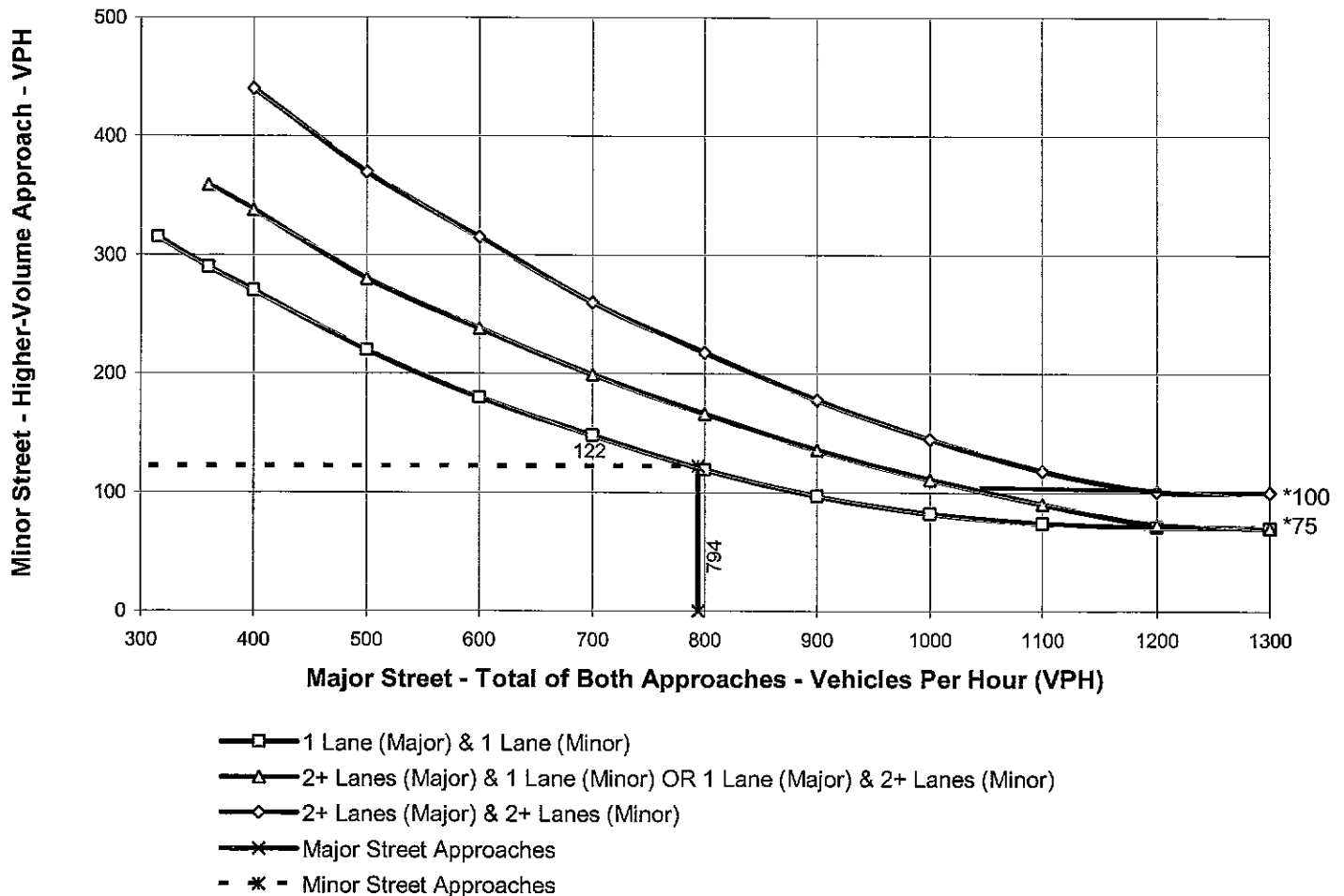
Major Street Name = **SANTIAGO CYN RD**

Total of Both Approaches (VPH) = **794**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **LIVE OAK CYN RD**

High Volume Approach (VPH) = **122**
Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



* Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

WARRANT 3, PEAK HOUR (70% FACTOR) (Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (AM)**

Major Street Name = **SANTIAGO CANYON RD**

Total of Both Approaches (VPH) = **624**

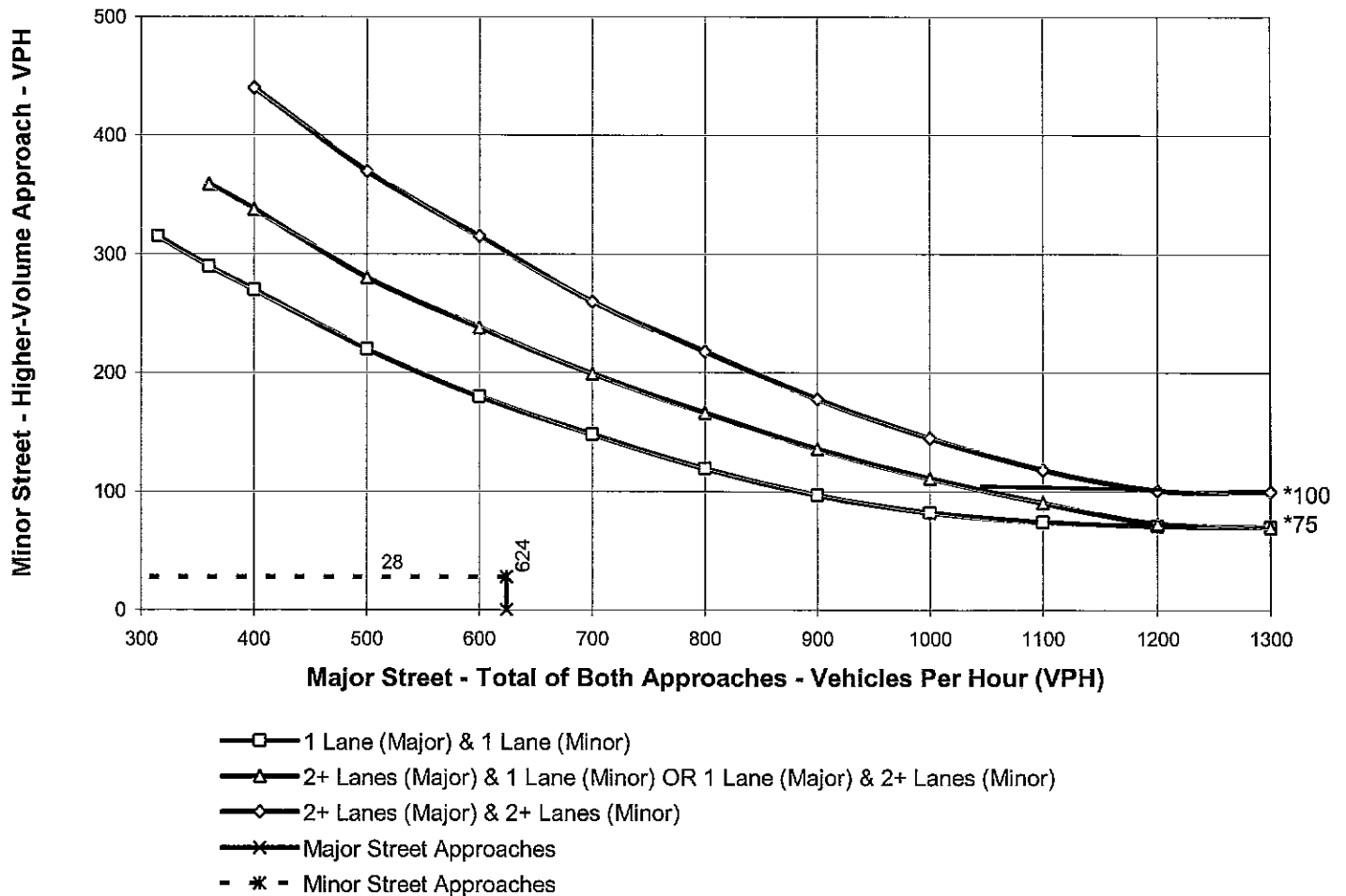
Number of Approach Lanes Major Street = **1**

Minor Street Name = **MODJESKA GRADE RD**

High Volume Approach (VPH) = **28**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

WARRANT 3, PEAK HOUR (70% FACTOR) (Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **EXISTING (PM)**

Major Street Name = **SANTIAGO CANYON RD**

Total of Both Approaches (VPH) = **742**

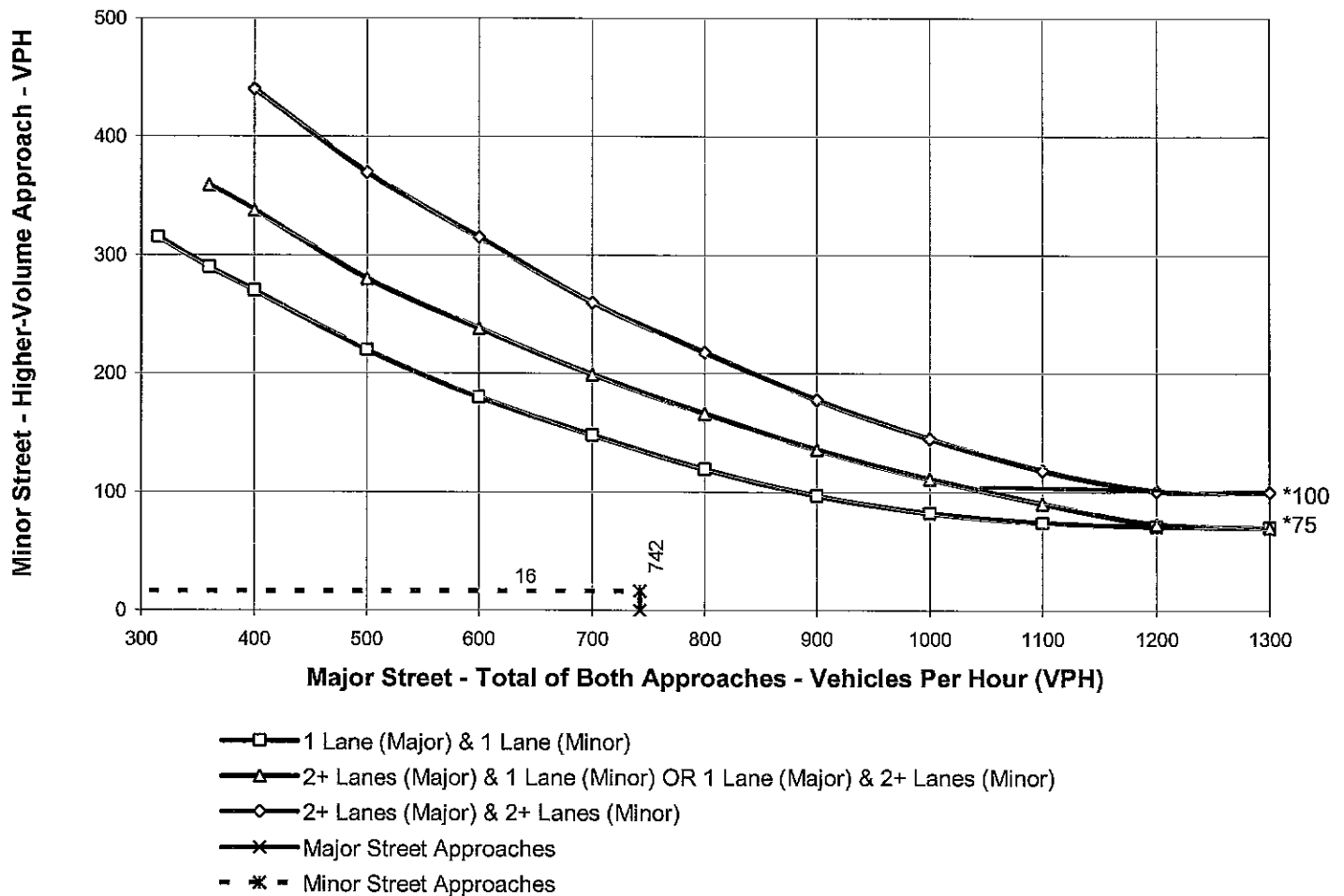
Number of Approach Lanes Major Street = **1**

Minor Street Name = **MODJESKA GRADE RD**

High Volume Approach (VPH) = **16**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

WARRANT 3, PEAK HOUR (70% FACTOR) (Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **INTERIM (YEAR 2015) WITH PROJECT (AM)**

Major Street Name = **SANTIAGO CANYON RD**

Total of Both Approaches (VPH) = **692**

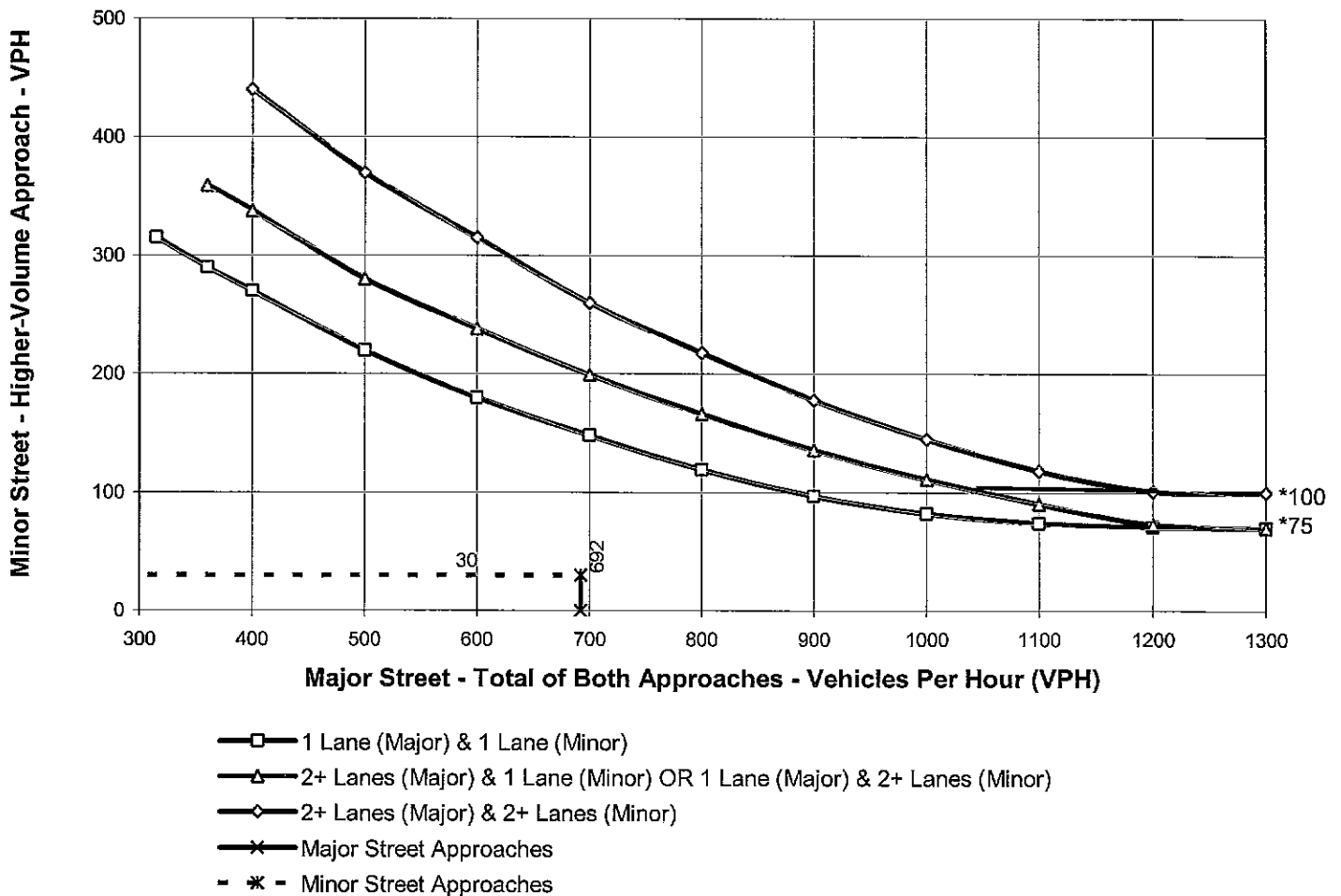
Number of Approach Lanes Major Street = **1**

Minor Street Name = **MODJESKA GRADE RD**

High Volume Approach (VPH) = **30**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

November 2003

WARRANT 3, PEAK HOUR (70% FACTOR) (Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **INTERIM (YEAR 2015) WITH PROJECT (PM)**

Major Street Name = **SANTIAGO CANYON RD**

Total of Both Approaches (VPH) = **825**

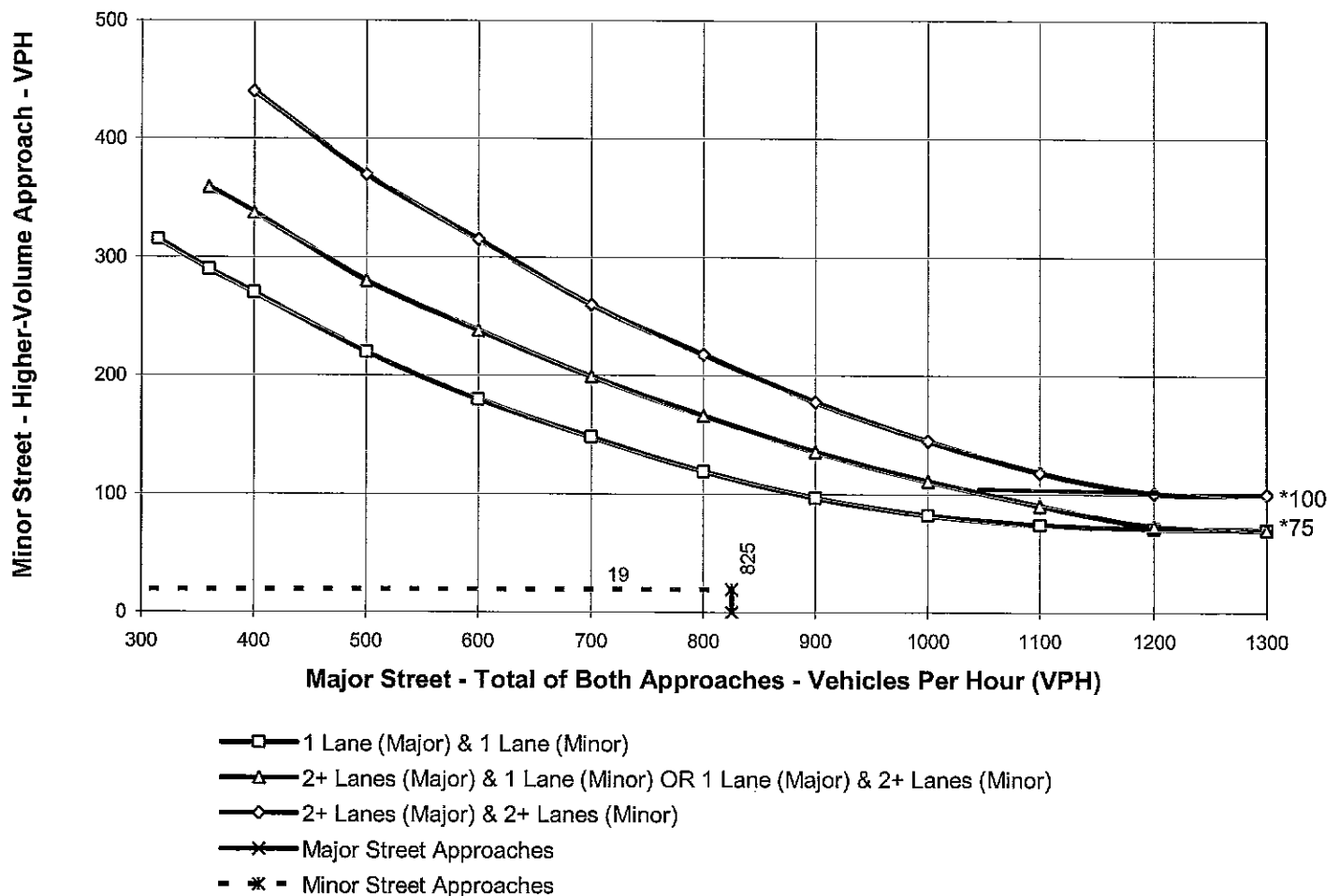
Number of Approach Lanes Major Street = **1**

Minor Street Name = **MODJESKA GRADE RD**

High Volume Approach (VPH) = **19**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



WARRANT 3, PEAK HOUR (70% FACTOR) (Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **BUILDOUT (YEAR 2035) WITH PROJECT (AM)**

Major Street Name = **SANTIAGO CANYON RD**

Total of Both Approaches (VPH) = **942**

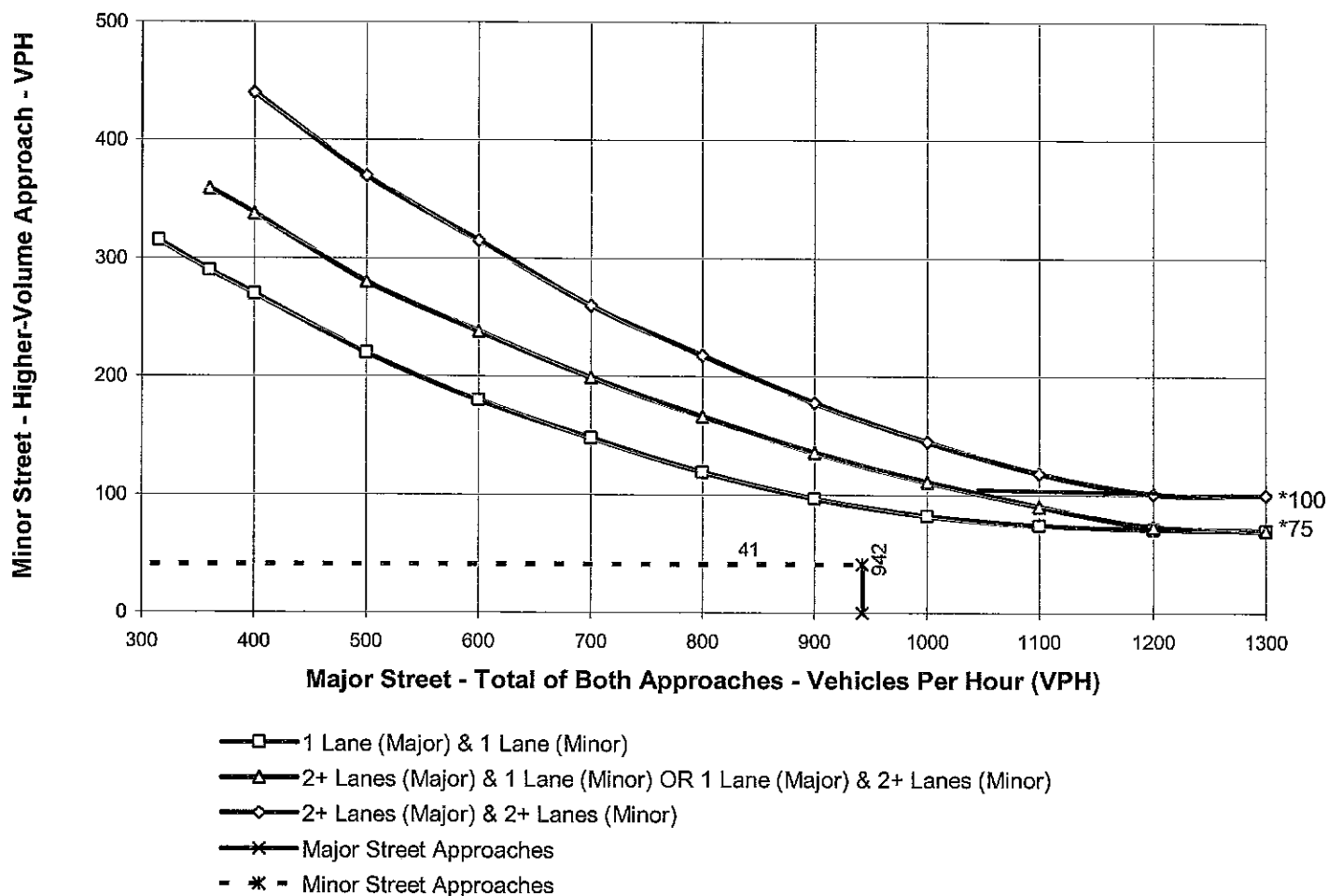
Number of Approach Lanes Major Street = **1**

Minor Street Name = **MODJESKA GRADE RD**

High Volume Approach (VPH) = **41**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

WARRANT 3, PEAK HOUR (70% FACTOR) (Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **BUILDOUT (YEAR 2035) WITH PROJECT (PM)**

Major Street Name = **SANTIAGO CANYON RD**

Total of Both Approaches (VPH) = **1121**

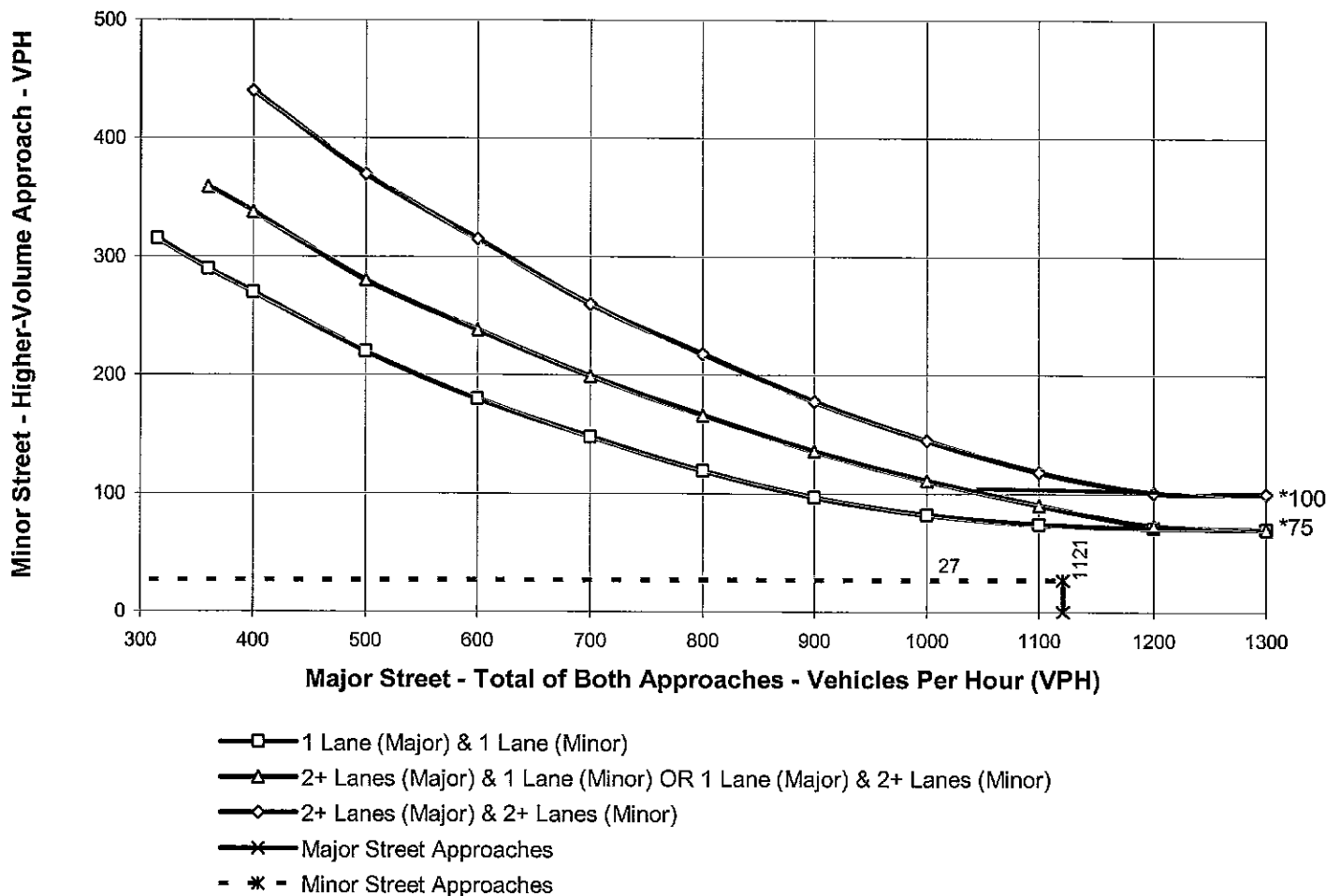
Number of Approach Lanes Major Street = **1**

Minor Street Name = **MODJESKA GRADE RD**

High Volume Approach (VPH) = **27**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

WARRANT 3, PEAK HOUR (70% FACTOR) (Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **INTERIM (YEAR 2015) WITH PROJECT (AM)**

Major Street Name = **SANTIAGO CANYON RD**

Total of Both Approaches (VPH) = **721**

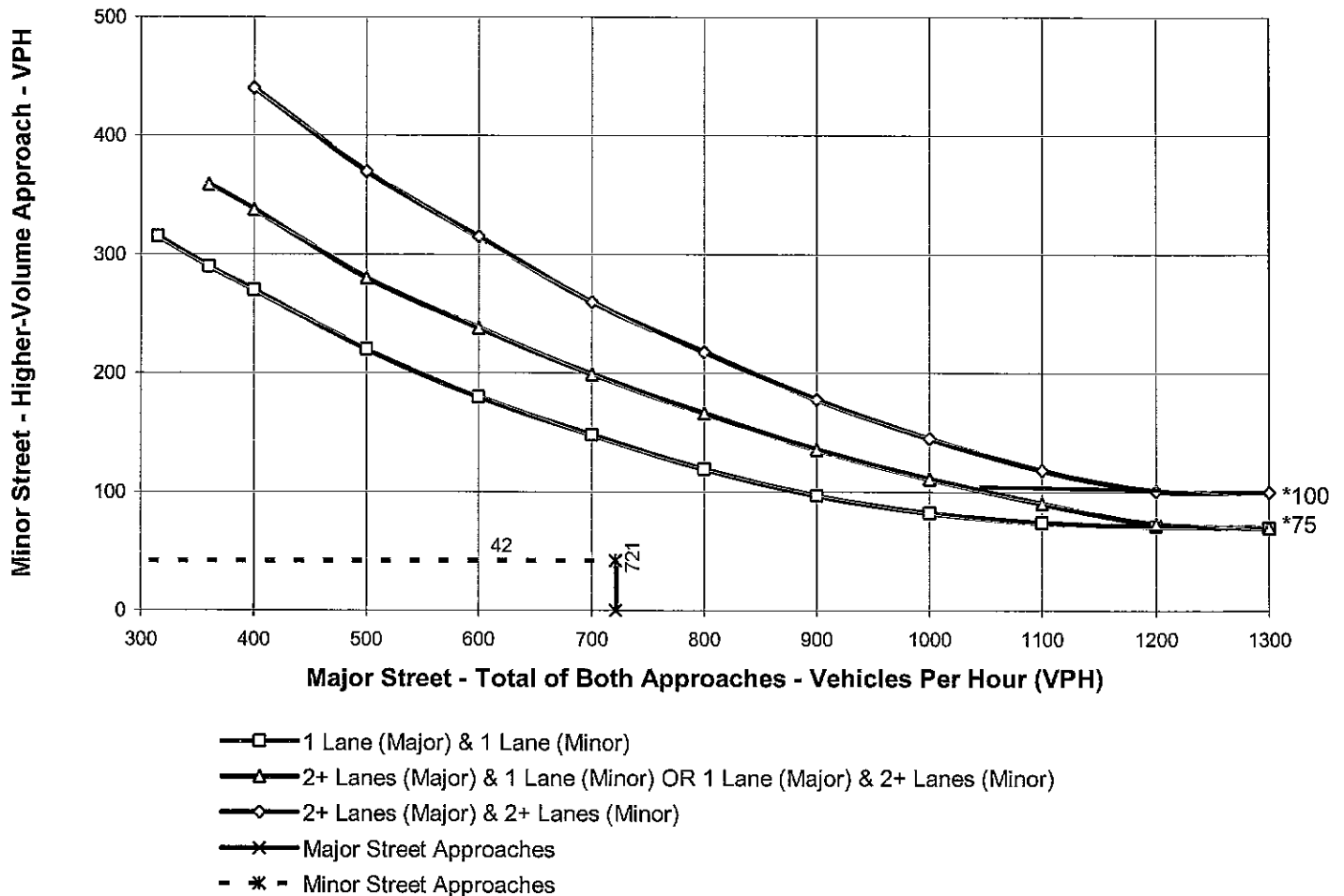
Number of Approach Lanes Major Street = **1**

Minor Street Name = **PROJECT ACCESS**

High Volume Approach (VPH) = **42**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

WARRANT 3, PEAK HOUR (70% FACTOR) (Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **INTERIM (YEAR 2015) WITH PROJECT (PM)**

Major Street Name = **SANTIAGO CANYON RD**

Total of Both Approaches (VPH) = **865**

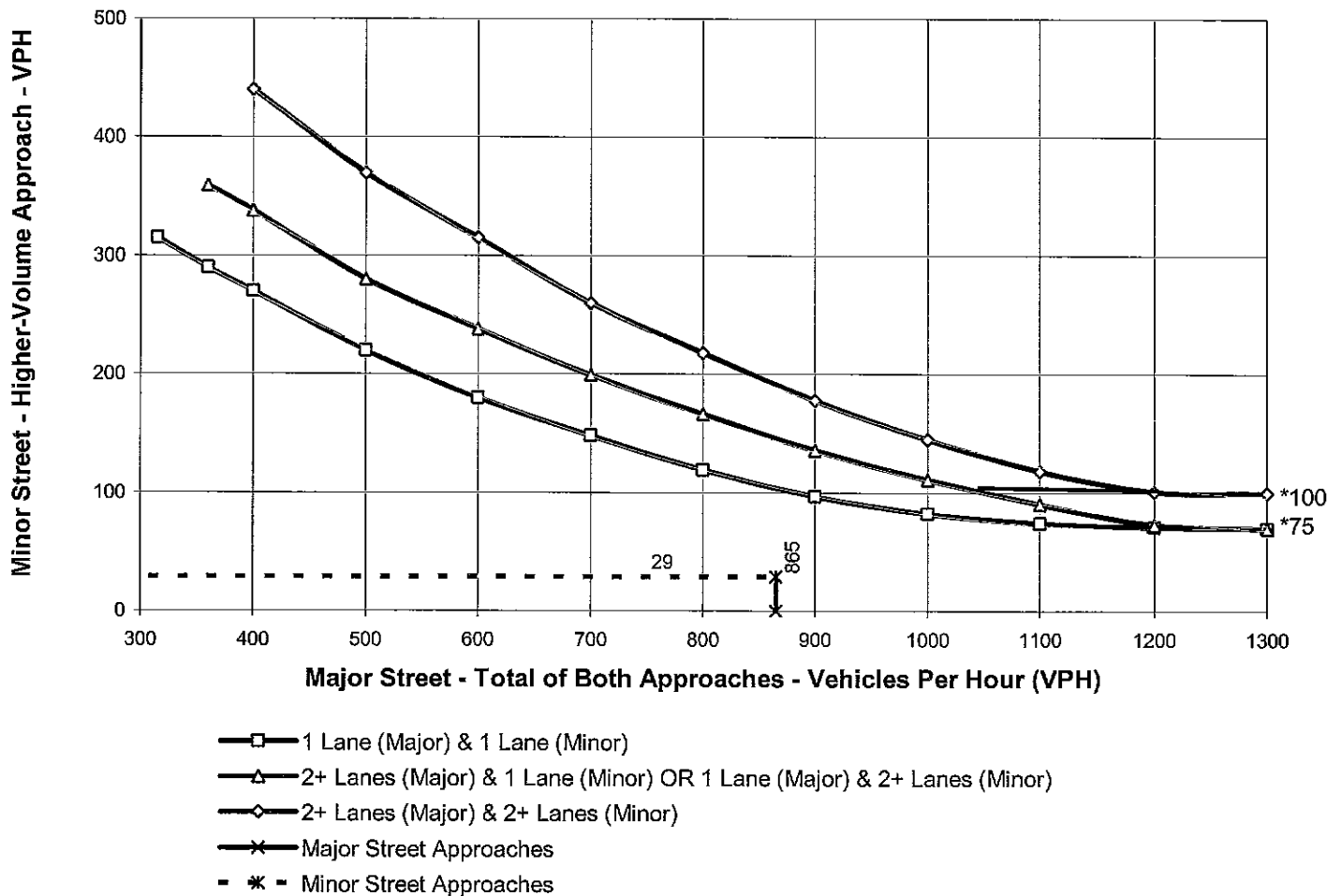
Number of Approach Lanes Major Street = **1**

Minor Street Name = **PROJECT ACCESS**

High Volume Approach (VPH) = **29**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

WARRANT 3, PEAK HOUR (70% FACTOR) (Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **BUILDOUT (YEAR 2035) WITH PROJECT (AM)**

Major Street Name = **SANTIAGO CANYON RD**

Total of Both Approaches (VPH) = **981**

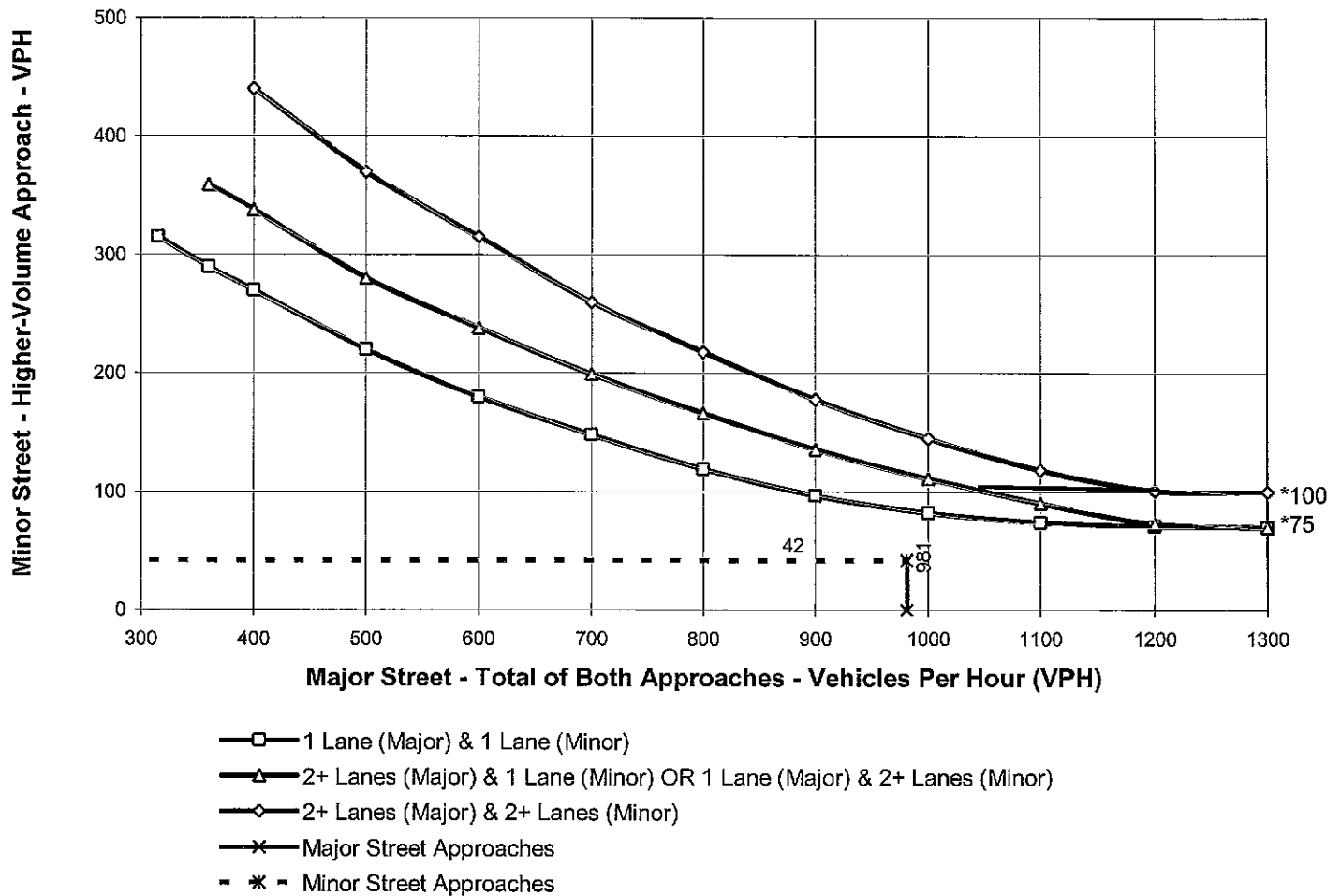
Number of Approach Lanes Major Street = **1**

Minor Street Name = **PROJECT ACCESS**

High Volume Approach (VPH) = **42**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

WARRANT 3, PEAK HOUR (70% FACTOR) (Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **BUILDOUT (YEAR 2035) WITH PROJECT (PM)**

Major Street Name = **SANTIAGO CANYON RD**

Total of Both Approaches (VPH) = **1168**

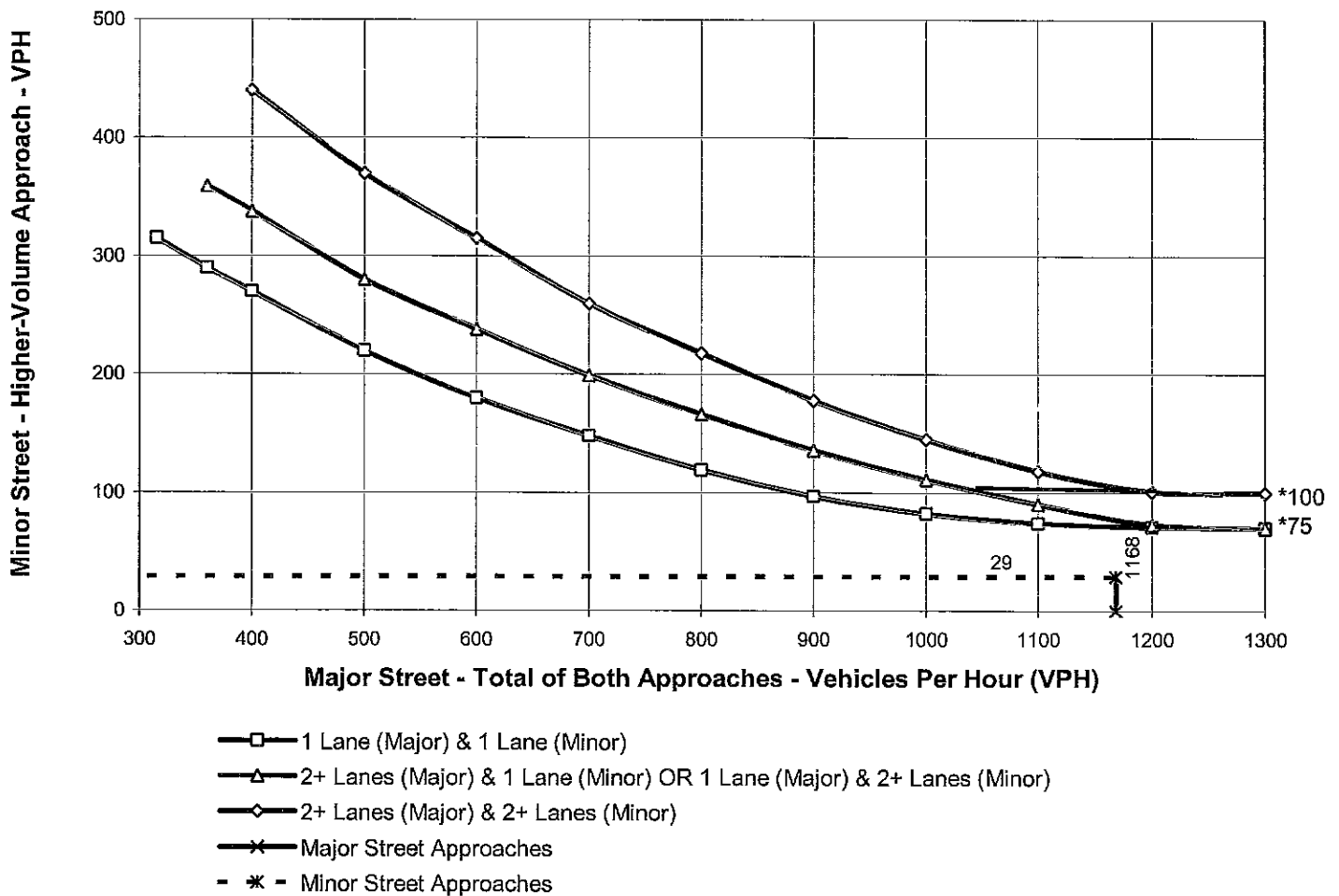
Number of Approach Lanes Major Street = **1**

Minor Street Name = **PROJECT ACCESS**

High Volume Approach (VPH) = **29**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



Appendix K

Percent Time Following LOS Analysis

Table K-1

Percent Time Following LOS Analysis for Existing Conditions

EXISTING CONDITIONS				
Location	AM		PM	
	Percent Time Spent Following	LOS	Percent Time Spent Following	LOS
Santiago Canyon Road				
• n/o Live Oak Canyon Road	67.0%	D	68.1%	D
• s/o Modjeska Grade Road	67.6%	D	69.1%	D
• n/o Modjeska Grade Road	65.0%	C	71.2%	D

TWO-WAY TWO LANE HIGHWAY SEGMENT WORKSHEET

General Information

Analyst: Robert Kahn
 Job Number: 2218-11-01
 Date: 7/6/2011
 Time Period: AM Peak Hour

Site Information

Highway: Santiago Canyon Road
 From/To: N/O Live Oak Canyon Road
 Jurisdiction: Orange County
 Analysis Year: 2011

Operational (LOS) Design (vp) Planning (LOS) Planning (vp)

Input Data

Class 1

Shoulder Width:	8 Ft.	Terrain	Level ?	NO	Rolling ?	YES
Shoulder Width:	12 Ft.					
Lane Width:	12 Ft.	Two-way Volume:		625	vph	
Lane Width:	8 Ft.	Directional Split:				
		North/East:		42.9	%	
Roadway Direction:	North/South	South/West:		57.1	%	
		PHF:		0.924		
Segment Length (L1):	0.57 Mi.	% Trucks:		1.1	%	
		% RVs:		0.1	%	
		% No-Passing:		100	%	
		Access Pts per Mi.:		5.3	Pts./Mi.	

Average Travel Speed

Grade Adjustment Factor f_g (Exhibit 20-7):	0.93		
PCEs for Trucks ET (Exhibit 20-9):	1.9		
PCEs for RVs ER (Exhibit 20-9)	1.1		
Heavy Vehicle Adjustment Factor f_{HV} :	0.990		
Two-way Flow Rate V_p :	735 vph	Over Capacity?	NO
Highest Directional Flow Rate:	419 vph	Over Capacity?	NO
Estimated Free Flow Speed:	55 mph		
Adj. for Lane Width/shoulder f_{LS} (Exhibit 20-5):	0 mph		
Adj. for access points f_A (Exhibit 20-6):	1.3 mph		
Free-Flow Speed FFS: (FFS = BFFS - f_{LS} - f_A):	53.75 mph		
Adj. for No Passing f_{NP} (Exhibit 20-11):	3.9 mph		
Average Travel Speed $ATS = FFS - .00776v_p - f_{NP}$:	44.1 mph		

Percent Time-Spent Following

Grade Adjustment Factor f_g (Exhibit 20-8):	0.9		
PCE Trucks ET (Exhibit 20-10):	1.5		
PCE RVs ER (Exhibit 20-10):	1.0		
Heavy Vehicle Adjustment Factor f_{HV} :	1.0		
Two-Way Flow Rate v_p :	724 vph	Over Capacity?	NO
Highest Directional Flow Rate:	413 vph	Over Capacity?	NO
Base Percent Time spent following (BPTSF):	47.1 %		
Adj. for dir. Dist. And no passing f_d/np :	19.9 %		
Percent Time-Spent Following (PTSF):	67.0 %		

Level of Service and Other Performance Measures

Level of Service (LOS) (Exhibit 20-2 or 20-4):	D
Volume to Capacity Ratio (v/c):	0.23
Peak 15-minute VMT15:	96 veh-Mi.
Peak Hour VMT 60:	356 veh-Mi.
Peak 15-minute Travel Time (TT15):	2.2 veh-hrs

Notes

1. If V_p is greater or equal to 3,200 vph terminate analysis - the LOS = F
2. If the highest Directional Flow is greater or equal to 1,700 vph terminate analysis - the LOS = F

TWO-WAY TWO LANE HIGHWAY SEGMENT WORKSHEET

General Information

Analyst: Robert Kahn
 Job Number: 2218-11-01
 Date: 7/6/2011
 Time Period: PM Peak Hour

Site Information

Highway: Santiago Canyon Road
 From/To: N/O Live Oak Canyon Road
 Jurisdiction: Orange County
 Analysis Year: 2011

Operational (LOS) Design (vp) Planning (LOS) Planning (vp)

Input Data

		Class	1		
Shoulder Width:	8 Ft.	Terrain	Level ?	NO	Rolling ? YES
Shoulder Width:	12 Ft.				
Lane Width:	<----- 12 Ft.	Two-way Volume:		731	vph
Lane Width:	-----> 8 Ft.	Directional Split:			
		North/East:		59.9	%
Roadway Direction:	North/South	South/West:		40.1	%
		PHF:		0.951	
Segment Length (L1):	0.57 Mi.	% Trucks:		1.1	%
		% RVs		0.1	%
		% No-Passing:		100	%
		Access Pts per Mi.:		5.3	Pts./Mi.

Average Travel Speed

Grade Adjustment Factor f_g (Exhibit 20-7):	0.93		
PCEs for Trucks ET (Exhibit 20-9):	1.9		
PCEs for RVs ER (Exhibit 20-9)	1.1		
Heavy Vehicle Adjustment Factor f_{HV} :	0.990		
Two-way Flow Rate V_p :	835 vph	Over Capacity?	NO
Highest Directional Flow Rate:	500 vph	Over Capacity?	NO
Estimated Free Flow Speed:	55 mph		
Adj. for Lane Width/shoulder f_{LS} (Exhibit 20-5):	0 mph		
Adj. for access points f_A (Exhibit 20-6):	1.3 mph		
Free-Flow Speed FFS : ($FFS = BFFS - f_{LS} - f_A$):	53.75 mph		
Adj. for No Passing f_{NP} (Exhibit 20-11):	3 mph		
Average Travel Speed $ATS = FFS - .00776v_p - f_{NP}$:	44.3 mph		

Percent Time-Spent Following

Grade Adjustment Factor f_g (Exhibit 20-8):	0.9		
PCE Trucks ET (Exhibit 20-10):	1.5		
PCE RVs ER (Exhibit 20-10):	1.0		
Heavy Vehicle Adjustment Factor f_{HV} :	1.0		
Two-Way Flow Rate v_p :	822 vph	Over Capacity?	NO
Highest Directional Flow Rate:	493 vph	Over Capacity?	NO
Base Percent Time spent following (BPTSF):	51.5 %		
Adj. for dir. Dist. And no passing f_d/n_p :	16.6 %		
Percent Time-Spent Following (PTSF):	68.1 %		

Level of Service and Other Performance Measures

Level of Service (LOS) (Exhibit 20-2 or 20-4):	D
Volume to Capacity Ratio (v/c):	0.26
Peak 15-minute VMT15:	110 veh-Mi.
Peak Hour VMT 60:	417 veh-Mi.
Peak 15-minute Travel Time (TT15):	2.5 veh-hrs

Notes

1. If V_p is greater or equal to 3,200 vph terminate analysis - the LOS = F
2. If the highest Directional Flow is greater or equal to 1,700 vph terminate analysis - the LOS = F

TWO-WAY TWO LANE HIGHWAY SEGMENT WORKSHEET

General Information

Analyst: Robert Kahn
 Job Number: 2218-11-01
 Date: 7/6/2011
 Time Period: AM Peak Hour

Site Information

Highway: Santiago Canyon Road
 From/To: S/O Modjeska Grade Road
 Jurisdiction: Orange County
 Analysis Year: 2011

Operational (LOS) Design (vp) Planning (LOS) Planning (vp)

Input Data

		Class	1		
Shoulder Width:	8 Ft.	Terrain	Level ?	NO	Rolling ? YES
Shoulder Width:	12 Ft.				
Lane Width:	<----- 12 Ft.	Two-way Volume:		652	vph
Lane Width:	-----> 8 Ft.	Directional Split:			
		North/East:		50.9	%
Roadway Direction:	North/South	South/West:		49.1	%
		PHF:		0.926	
Segment Length (L1):	0.57 Mi.	% Trucks:		1.1	%
		% RVs		0.1	%
		% No-Passing:		100	%
		Access Pts per Mi.:		5.3	Pts./Mi.

Average Travel Speed

Grade Adjustment Factor fg (Exhibit 20-7):	0.93		
PCEs for Trucks ET (Exhibit 20-9):	1.9		
PCEs for RVs ER (Exhibit 20-9)	1.1		
Heavy Vehicle Adjustment Factor fHV:	0.990		
Two-way Flow Rate Vp:	765 vph	Over Capacity?	NO
Highest Directional Flow Rate:	389 vph	Over Capacity?	NO
Estimated Free Flow Speed:	55 mph		
Adj. for Lane Width/shoulder fLS (Exhibit 20-5):	0 mph		
Adj. for access points fA (Exhibit 20-6):	1.3 mph		
Free-Flow Speed FFS: (FFS = BFFS - fLS - fA):	53.75 mph		
Adj. for No Passing fNP (Exhibit 20-11):	3.9 mph		
Average Travel Speed ATS = FFS - .00776vp - fNP:	43.9 mph		

Percent Time Spent Following

Grade Adjustment Factor fG (Exhibit 20-8):	0.9		
PCE Trucks ET (Exhibit 20-10):	1.5		
PCE RVs ER (Exhibit 20-10):	1.0		
Heavy Vehicle Adjustment Factor fHV:	1.0		
Two-Way Flow Rate vp:	753 vph	Over Capacity?	NO
Highest Directional Flow Rate:	383 vph	Over Capacity?	NO
Base Percent Time spent following (BPTSF):	48.4 %		
Adj. for dir. Dist. And no passing fd/np:	19.2 %		
Percent Time-Spent Following (PTSF):	67.6 %		

Level of Service and Other Performance Measures

Level of Service (LOS) (Exhibit 20-2 or 20-4):	D
Volume to Capacity Ratio (v/c):	0.24
Peak 15-minute VMT15:	100 veh-Mi.
Peak Hour VMT 60:	372 veh-Mi.
Peak 15-minute Travel Time (TT15):	2.3 veh-hrs

Notes

1. If Vp is greater or equal to 3,200 vph terminate analysis - the LOS = F
2. If the highest Directional Flow is greater or equal to 1,700 vph terminate analysis - the LOS = F

TWO-WAY TWO LANE HIGHWAY SEGMENT WORKSHEET

General Information

Analyst: Robert Kahn
 Job Number: 2218-11-01
 Date: 7/6/2011
 Time Period: PM Peak Hour

Site Information

Highway: Santiago Canyon Road
 From/To: S/O Modjeska Grade Road
 Jurisdiction: Orange County
 Analysis Year: 2011

Operational (LOS) Design (vp) Planning (LOS) Planning (vp)

Input Data

Class 1

Shoulder Width:	8 Ft.	Terrain	Level ?	NO	Rolling ?	YES
Shoulder Width:	12 Ft.					
Lane Width:	<-----> 12 Ft.	Two-way Volume:		756	vph	
Lane Width:	-----> 8 Ft.	Directional Split:				
		North/East:		54.8	%	
Roadway Direction:	North/South	South/West:		45.2	%	
		PHF:		0.952		
Segment Length (L1):	0.57 Mi.	% Trucks:		1.1	%	
		% RVs		0.1	%	
		% No-Passing:		100	%	
		Access Pts per Mi.:		5.3	Pts./Mi.	

Average Travel Speed

Grade Adjustment Factor fg (Exhibit 20-7):	0.93		
PCEs for Trucks ET (Exhibit 20-9):	1.9		
PCEs for RVs ER (Exhibit 20-9)	1.1		
Heavy Vehicle Adjustment Factor fHV:	0.990		
Two-way Flow Rate Vp:	862 vph	Over Capacity?	NO
Highest Directional Flow Rate:	473 vph	Over Capacity?	NO
Estimated Free Flow Speed:	55 mph		
Adj. for Lane Width/shoulder fLS (Exhibit 20-5):	0 mph		
Adj. for access points fA (Exhibit 20-6):	1.3 mph		
Free-Flow Speed FFS: (FFS = BFFS - fLS - fA):	53.75 mph		
Adj. for No Passing fNP (Exhibit 20-11):	3 mph		
Average Travel Speed ATS = FFS - .00776vp - fNP:	44.1 mph		

Percent Time-Spent Following

Grade Adjustment Factor fg (Exhibit 20-8):	0.9		
PCE Trucks ET (Exhibit 20-10):	1.5		
PCE RVs ER (Exhibit 20-10):	1.0		
Heavy Vehicle Adjustment Factor fHV:	1.0		
Two-Way Flow Rate vp:	849 vph	Over Capacity?	NO
Highest Directional Flow Rate:	465 vph	Over Capacity?	NO
Base Percent Time spent following (BPTSF):	52.6 %		
Adj. for dir. Dist. And no passing fd/np:	16.5 %		
Percent Time-Spent Following (PTSF):	69.1 %		

Level of Service and Other Performance Measures

Level of Service (LOS) (Exhibit 20-2 or 20-4):	D
Volume to Capacity Ratio (v/c):	0.27
Peak 15-minute VMT15:	113 veh-Mi.
Peak Hour VMT 60:	431 veh-Mi.
Peak 15-minute Travel Time (TT15):	2.6 veh-hrs

Notes

1. If Vp is greater or equal to 3,200 vph terminate analysis - the LOS = F
2. If the highest Directional Flow is greater or equal to 1,700 vph terminate analysis - the LOS = F

TWO-WAY TWO LANE HIGHWAY SEGMENT WORKSHEET

General Information

Analyst: Robert Kahn
 Job Number: 2218-11-01
 Date: 7/6/2011
 Time Period: AM Peak Hour

Site Information

Highway: Santiago Canyon Road
 From/To: N/O Modjeska Grade Road
 Jurisdiction: Orange County
 Analysis Year: 2011

Operational (LOS) Design (vp) Planning (LOS) Planning (vp)

Input Data

		Class	1	
Shoulder Width:	8 Ft.	Terrain	Level ?	NO
Shoulder Width:	12 Ft.		Rolling ?	YES
Lane Width:	<----- 12 Ft.	Two-way Volume:		614 vph
Lane Width:	-----> 8 Ft.	Directional Split:		
		North/East:		52.4 %
Roadway Direction:	North/South	South/West:		47.6 %
		PHF:		0.97
Segment Length (L1):	1.7 Mi.	% Trucks:		1.1 %
		% RVs		0.1 %
		% No-Passing:		100 %
		Access Pts per Mi.:		5.3 Pts./Mi.

Average Travel Speed

Grade Adjustment Factor fg (Exhibit 20-7):	0.93		
PCEs for Trucks ET (Exhibit 20-9):	1.9		
PCEs for RVs ER (Exhibit 20-9)	1.1		
Heavy Vehicle Adjustment Factor fHV:	0.990		
Two-way Flow Rate Vp:	687 vph	Over Capacity?	NO
Highest Directional Flow Rate:	360 vph	Over Capacity?	NO
Estimated Free Flow Speed:	55 mph		
Adj. for Lane Width/shoulder fLS (Exhibit 20-5):	0 mph		
Adj. for access points fA (Exhibit 20-6):	1.3 mph		
Free-Flow Speed FFS: (FFS = BFFS - fLS - fA):	53.75 mph		
Adj. for No Passing fNP (Exhibit 20-11):	3.9 mph		
Average Travel Speed ATS = FFS - .00776vp - fNP:	44.5 mph		

Percent Time-Spent Following

Grade Adjustment Factor fG (Exhibit 20-8):	0.9		
PCE Trucks ET (Exhibit 20-10):	1.5		
PCE RVs ER (Exhibit 20-10):	1.0		
Heavy Vehicle Adjustment Factor fHV:	1.0		
Two-Way Flow Rate vp:	677 vph	Over Capacity?	NO
Highest Directional Flow Rate:	355 vph	Over Capacity?	NO
Base Percent Time spent following (BPTSF):	44.9 %		
Adj. for dir. Dist. And no passing fd/np:	20.1 %		
Percent Time-Spent Following (PTSF):	65.0 %		

Level of Service and Other Performance Measures

Level of Service (LOS) (Exhibit 20-2 or 20-4):	C
Volume to Capacity Ratio (v/c):	0.21
Peak 15-minute VMT15:	269 veh-Mi.
Peak Hour VMT 60:	1,044 veh-Mi.
Peak 15-minute Travel Time (TT15):	6.0 veh-hrs

Notes

1. If Vp is greater or equal to 3,200 vph terminate analysis - the LOS = F
2. If the highest Directional Flow is greater or equal to 1,700 vph terminate analysis - the LOS = F

TWO-WAY TWO LANE HIGHWAY SEGMENT WORKSHEET

General Information

Analyst: Robert Kahn
 Job Number: 2218-11-01
 Date: 7/6/2011
 Time Period: PM Peak Hour

Site Information

Highway: Santiago Canyon Road
 From/To: N/O Modjeska Grade Road
 Jurisdiction: Orange County
 Analysis Year: 2011

Operational (LOS) Design (vp) Planning (LOS) Planning (vp)

Input Data

		Class	1		
Shoulder Width:	8 Ft.	Terrain	Level ?	NO	Rolling ? YES
Shoulder Width:	12 Ft.				
Lane Width:	<----- 12 Ft.	Two-way Volume:		774	vph
Lane Width:	-----> 8 Ft.	Directional Split:			
		North/East:		48.8	%
Roadway Direction:	North/South	South/West:		51.2	%
		PHF:		0.909	
Segment Length (L1):	1.7 Mi.	% Trucks:		1.1	%
		% RVs		0.1	%
		% No-Passing:		100	%
		Access Pts per Mi.:		5.3	Pts./Mi.

Average Travel Speed

Grade Adjustment Factor fg (Exhibit 20-7):	0.93		
PCEs for Trucks ET (Exhibit 20-9):	1.9		
PCEs for RVs ER (Exhibit 20-9)	1.1		
Heavy Vehicle Adjustment Factor fHV:	0.990		
Two-way Flow Rate Vp:	925 vph	Over Capacity?	NO
Highest Directional Flow Rate:	473 vph	Over Capacity?	NO
Estimated Free Flow Speed:	55 mph		
Adj. for Lane Width/shoulder fLS (Exhibit 20-5):	0 mph		
Adj. for access points fA (Exhibit 20-6):	1.3 mph		
Free-Flow Speed FFS: (FFS = BFFS - fLS - fA):	53.75 mph		
Adj. for No Passing fNP (Exhibit 20-11):	3 mph		
Average Travel Speed ATS = FFS - .00776vp - fNP:	43.6 mph		

Percent Time-Spent Following

Grade Adjustment Factor fG (Exhibit 20-8):	0.9		
PCE Trucks ET (Exhibit 20-10):	1.5		
PCE RVs ER (Exhibit 20-10):	1.0		
Heavy Vehicle Adjustment Factor fHV:	1.0		
Two-Way Flow Rate vp:	911 vph	Over Capacity?	NO
Highest Directional Flow Rate:	466 vph	Over Capacity?	NO
Base Percent Time spent following (BPTSF):	55.1 %		
Adj. for dir. Dist. And no passing fd/np:	16.1 %		
Percent Time-Spent Following (PTSF):	71.2 %		

Level of Service and Other Performance Measures

Level of Service (LOS) (Exhibit 20-2 or 20-4):	D
Volume to Capacity Ratio (v/c):	0.29
Peak 15-minute VMT15:	362 veh-Mi.
Peak Hour VMT 60:	1,316 veh-Mi.
Peak 15-minute Travel Time (TT15):	8.3 veh-hrs

Notes

1. If Vp is greater or equal to 3,200 vph terminate analysis - the LOS = F
2. If the highest Directional Flow is greater or equal to 1,700 vph terminate analysis - the LOS = F

Appendix L

Santiago Canyon Road Travel Time Runs and
Vehicle Classification Counts

SANTIAGO CANYON ROAD PEAK HOUR TRAVEL TIME STUDY

Location	AM Peak Hour Travel Times					
SANTIAGO CANYON ROAD (FROM LIVE OAK CANYON ROAD TO MODJESKA GRADE ROAD) Distance = 1.2 Miles	AM					
	NB			SB		
	Start Time	Travel Time (Sec)	Average Speed (MPH)	Start Time	Travel Time (Sec)	Average Speed (MPH)
Run 1	7:33 AM	81	53.3	7:29 AM	78	55.4
Run 2	7:41 AM	88	49.1	7:37 AM	80	54.0
Run 3	7:48 AM	84	51.4	7:45 AM	77	56.1
Run 4	7:57 AM	85	50.8	7:52 AM	81	53.3
Run 5	8:05 AM	91	47.5	8:01 AM	77	56.1
<i>Average</i>	--	85.8	50.4	--	78.6	55.0
<i>2-Way Average Travel Time Speed for AM Peak Hour = 52.7 Mph</i>						

Location	PM Peak Hour Travel Times					
SANTIAGO CANYON ROAD (FROM LIVE OAK CANYON ROAD TO MODJESKA GRADE ROAD) Distance = 1.2 Miles	PM					
	NB			SB		
	Start Time	Travel Time (Sec)	Average Speed (MPH)	Start Time	Travel Time (Sec)	Average Speed (MPH)
Run 1	4:56 PM	99	43.6	5:01 PM	81	53.3
Run 2	5:05 PM	83	52.0	5:12 PM	78	55.4
Run 3	5:16 PM	88	49.1	5:21 PM	78	55.4
Run 4	5:25 PM	92	47.0	5:29 PM	79	54.7
Run 5	5:35 PM	96	45.0	5:32	79	54.7
Average	--	91.6	47.3	--	79	54.7
2-Way Average Travel Time Speed for PM Peak Hour = 51.0 Mph						

Table 12
Santiago Canyon Road PM Peak Hour Vehicle Classification Counts

Project: Saddle Crest Traffic Impact Study
Job #: 2218-11-01
Location: Santiago Canyon Road N/O Ridgeline Road

Day: Tuesday
Date: 6/21/2011
Time: 4:45 PM - 5:45 PM

Vehicle Classification	Northbound		Southbound		Total	
	No.	%	No.	%	No.	%
Autos	399	98.5%	377	99.0%	776	98.7%
Heavy Trucks (More than 4 Tires)	5	1.2%	4	1.0%	9	1.1%
Recreational Vehicles	1	0.2%	0	0.0%	1	0.1%
<i>Total</i>	405	51.5%	381	48.5%	786	100.0%

Time	Northbound			Southbound		
	Autos	Heavy Trucks	Rec. Vehicles	Autos	Heavy Trucks	Rec. Vehicles
4:45 PM - 4:49 PM	18	0	1	19	1	0
4:50 PM - 4:54 PM	24	1	0	22	0	0
4:55 PM - 4:59 PM	39	0	0	19	1	0
5:00 PM - 5:04 PM	33	0	0	35	0	0
5:05 PM - 5:09 PM	45	0	0	38	0	0
5:10 PM - 5:14 PM	47	0	0	29	0	0
5:15 PM - 5:19 PM	50	1	0	24	0	0
5:20 PM - 5:24 PM	22	0	0	40	1	0
5:25 PM - 5:29 PM	34	1	0	32	0	0
5:30 PM - 5:34 PM	30	0	0	43	1	0
5:35 PM - 5:39 PM	30	2	0	36	0	0
5:40 PM - 5:44 PM	27	0	0	40	0	0
<i>TOTAL</i>	399	5	1	377	4	0

Table 13
Santiago Canyon Road PM Peak Hour Vehicle Classification Counts

Project: Saddle Crest Traffic Impact Study
Job #: 2218-11-01
Location: Santiago Canyon Road N/O Ridgeline Road

Day: Thursday
Date: 6/30/2011
Time: 7:15 PM - 8:15 PM

Vehicle Classification	Northbound		Southbound		Total	
	No.	%	No.	%	No.	%
Autos	323	98.2%	292	97.0%	615	97.6%
Heavy Trucks (More than 4 Tires)	6	1.8%	9	3.0%	15	2.4%
Recreational Vehicles	0	0.0%	0	0.0%	0	0.0%
<i>Total</i>	329	52.2%	301	47.8%	630	100.0%

Time	Northbound			Southbound		
	Autos	Heavy Trucks	Rec. Vehicles	Autos	Heavy Trucks	Rec. Vehicles
4:45 PM - 4:49 PM	21	0	0	19	2	0
4:50 PM - 4:54 PM	23	0	0	27	0	0
4:55 PM - 4:59 PM	36	0	0	12	0	0
5:00 PM - 5:04 PM	31	2	0	24	0	0
5:05 PM - 5:09 PM	35	0	0	38	1	0
5:10 PM - 5:14 PM	24	0	0	16	1	0
5:15 PM - 5:19 PM	22	0	0	19	0	0
5:20 PM - 5:24 PM	29	2	0	33	3	0
5:25 PM - 5:29 PM	24	0	0	39	1	0
5:30 PM - 5:34 PM	21	1	0	16	0	0
5:35 PM - 5:39 PM	32	1	0	27	0	0
5:40 PM - 5:44 PM	25	0	0	22	1	0
<i>TOTAL</i>	323	6	0	292	9	0

Appendix M

County of Orange Standard Plan No. 1107

Appendix N

Traffic Signal and Signing/Striping Cost Estimates

TRAFFIC SIGNAL COST ESTIMATE

Date: July 13, 2011		Location: Santiago Canyon Rd and Live Oak Canyon Rd			
Job Number: 2218-11-01					
By: RK Engineering Group, Inc.		Prepared for:			
Item No.	Description	Qty.	Unit	Unit Cost	Item Cost
1	Controller w/Cabinet (Type 90)	1	Ea.	\$19,150.00	\$19,150
37	Foundation (Controller)	1	Ea.	\$1,125.00	\$1,125
12	Elect. Service Meter (Type II)	1	Ea.	\$1,980.00	\$1,980
38	Foundation (Service Meter)	1	Ea.	\$660.00	\$660
25	Type 26 Pole (30'h) - 40' Mast Arm	1	Ea.	\$4,620.00	\$4,620
43	Foundation, 36" x 9'd (Re-bar) <Type 18-27(c4),28,29>	1	Ea.	\$1,785.00	\$1,785
18	Type 17 Pole (30'h) - 20' Mast Arm	1	Ea.	\$2,970.00	\$2,970
42	Foundation, 36" x 7'd (Re-bar) <Type 17,18-27(c3)>	1	Ea.	\$1,320.00	\$1,320
15	Type 1A Pole (10'h)	2	Ea.	\$470.00	\$940
39	Foundation, 24" x 3'd (No Re-bar) <Type 1A>	2	Ea.	\$430.00	\$860
46	Signal Head,12"Ø 3-section LED	6	Ea.	\$860.00	\$5,160
50	LED Module, Signal (Arrow: R,Y or G)	2	Ea.	\$200.00	\$400
55	Illuminated Street Name Sign (I.I.S.N.S.)	2	Ea.	\$1,060.00	\$2,120
126	Pull Box 6T	6	Ea.	\$345.00	\$2,070
63	1½" Conduit (Trenched)	855	LF	\$11.25	\$9,619
65	2" Conduit (Trenched)	1200	LF	\$16.50	\$19,800
69	3" Conduit (Trenched)	170	LF	\$23.50	\$3,995
160	SIC 6-pair #19 Cable	890	LF	\$3.20	\$2,848
8	Controller Modification (TS Mod.)	1	LS	\$660.00	\$660
58	Pull Box #5	2	Ea.	\$235.00	\$470
125	Pull Box 5T	2	Ea.	\$250.00	\$500
76	Detector Loop, 6'Ø	15	Ea.	\$370.00	\$5,550
102	Remove & Salvage [RS] Sign/Post	2	Ea.	\$66.00	\$132
108	Sandblast (Pavement Markings)	160	SF	\$1.98	\$317
87	Wiring, Signal (New TS)	1	LS	\$8,900.00	\$8,900
143	Furnish & Install Signal Post Mounted Sign	8	Ea.	\$120.00	\$960
SUBTOTAL					\$98,911
Engineering				10.00%	\$9,891
Fees, Permits, Supervision				15.00%	\$14,837
Contingencies				15.00%	\$14,837
TOTAL					\$138,475

Date:	July 13, 2011	Location:	El Toro Rd @ Glenn Ranch Rd		
Job Number:	2218-11-01				
By:	RK Engineering Group, Inc.	Prepared for:			
Item No.	Description	Qty.	Unit	Unit Cost	Item Cost
107	Sandblast (Striping)	4150	LF	\$0.30	\$1,245
113	Paint Double Yellow Line (Detail 21/22/27)	1200	LF	\$0.44	\$523
112	Paint Channelizing Line (Detail 38/38A)	520	LF	\$0.44	\$227
115	Paint Lane Striping (Detail 8/9/11/12)	300	LF	\$0.29	\$87
105	Thermoplastic Pavement Markings (Arrows & Legends)	156	SF	\$4.29	\$669
151	RPM (removal)	43	Ea.	\$4.00	\$172
119	R.P.M. (Reflective)	43	Ea.	\$6.60	\$284
8	Controller Modification (TS Mod.)	1	LS	\$660.00	\$660
				SUBTOTAL	\$3,866
				<i>Engineering</i>	10.00%
				<i>Fees, Permits, Supervision</i>	15.00%
				<i>Contingencies</i>	15.00%
				TOTAL	\$5,413